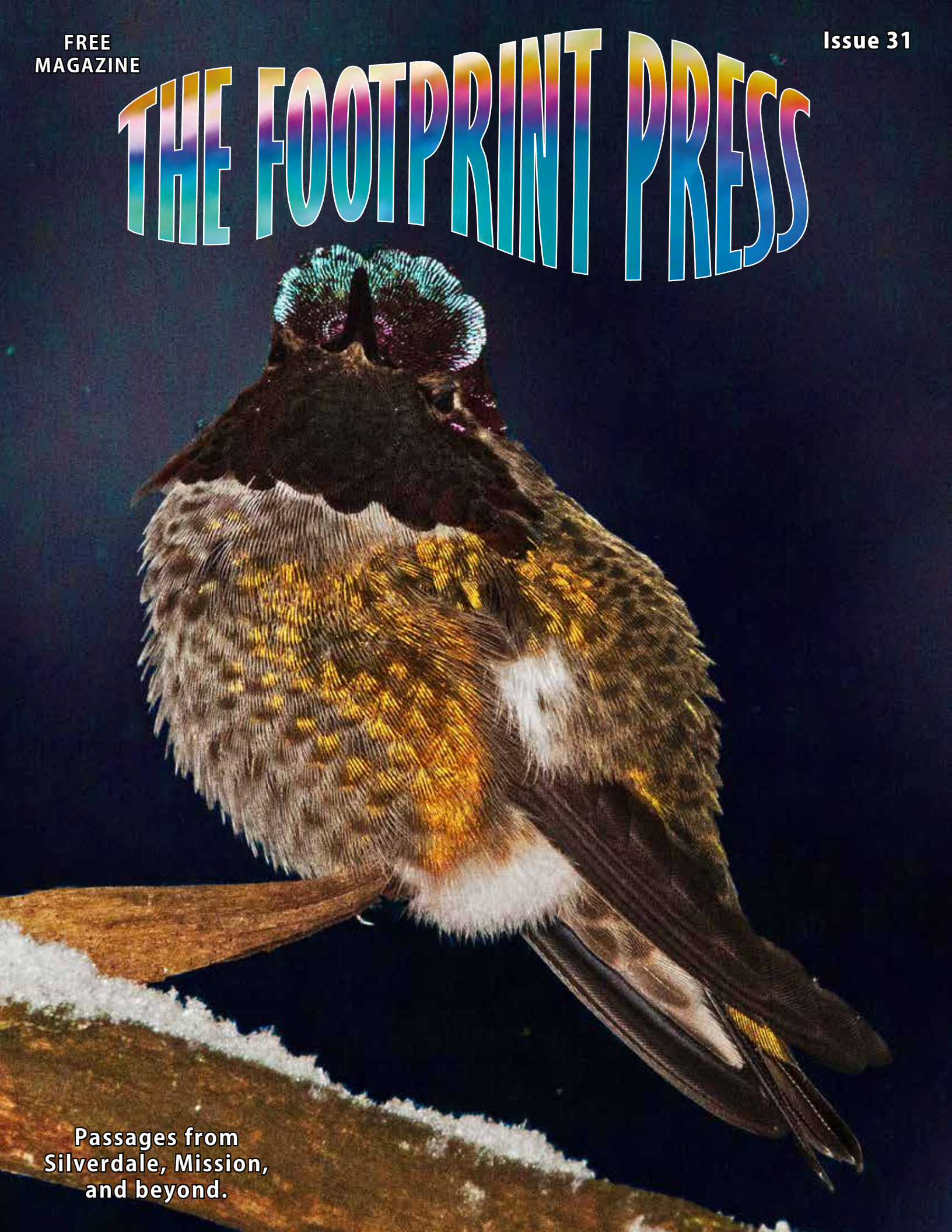
FREE
MAGAZINE

Issue 31

THE FOOTPRINT PRESS



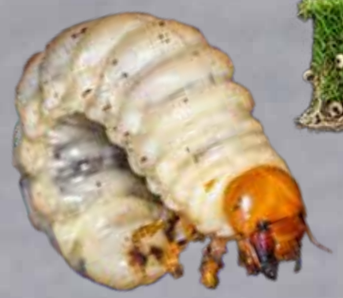
Passages from
Silverdale, Mission,
and beyond.

Message from the Editorial Committee

Little creatures inhabit every corner of the planet. Often overlooked, birds, insects, fish and other small animals play a huge role in their ecosystems. Creatures such as wild salmon are literally the lifeblood of the BC coast. They sustain much larger animals including bears and eagles, and transfer nutrients from the ocean to trees and forests. Little bats and birds keep insect populations in balance, and play a role in pollination of plants. The importance of tiny bumblebees to natural and cultivated food production cannot be underestimated. Like other little creatures, the bees have complex beneficial relationships with plants that we are only just starting to appreciate, but don't yet understand.

When we support little creatures, the benefits to local ecosystems can be enormous. When we conserve the natural environment and avoid contaminating fish and wildlife habitat with toxins such as chemical fertilizers, herbicides, pesticides, and untreated storm water runoff, we give all life a chance.

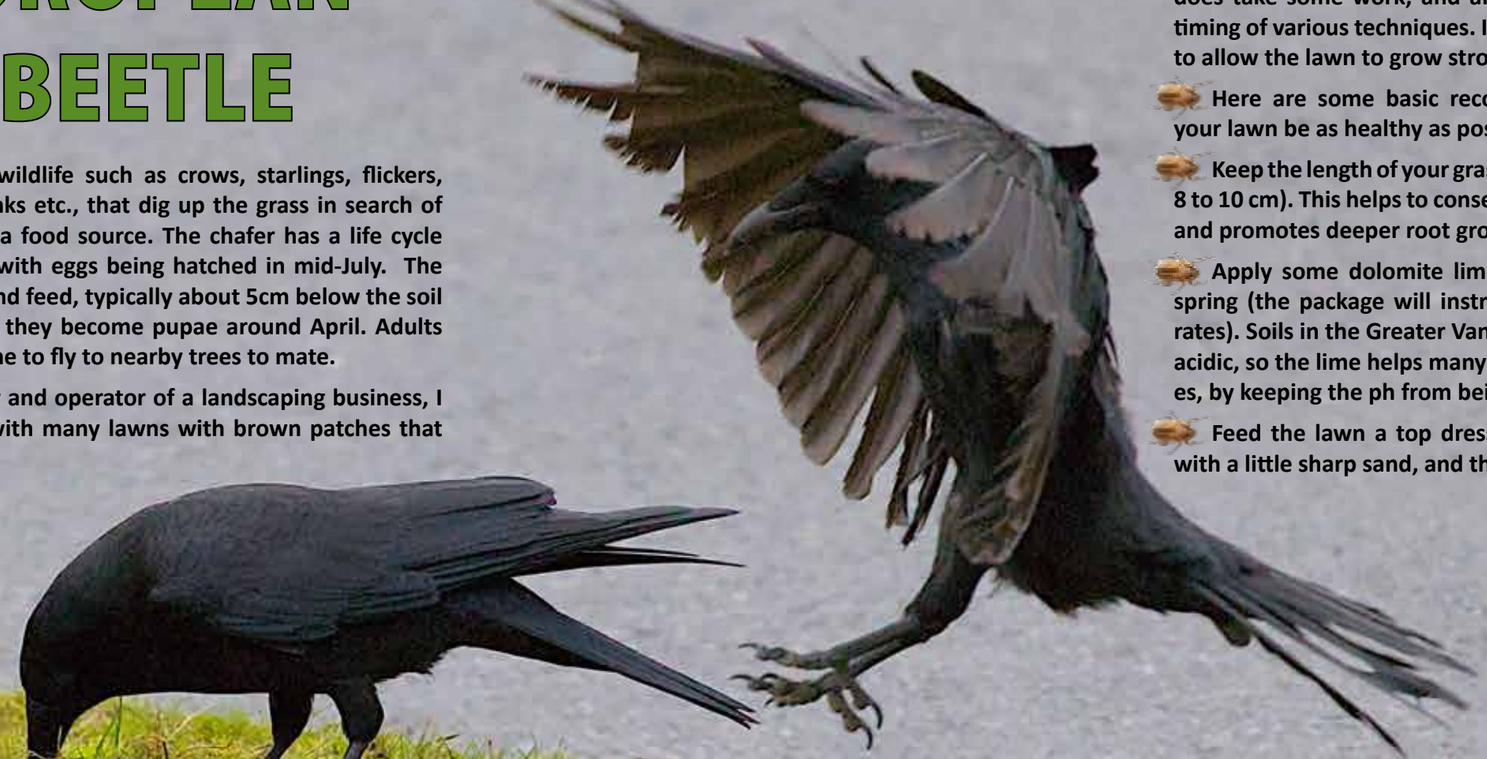
Cover and Editorial page:
Anna's Hummingbird photos
courtesy Bruce Klassen.



INVASION OF THE EUROPEAN CHAFER BEETLE

The European Chafer Beetle showed up in the Greater Vancouver Area in early 2000 and has since become a widespread destructive pest for landscapes with grasses. Its range has mostly been observed in the Greater Vancouver/Fraser Valley Areas, but it has also been found on Vancouver Island and as far east as Revelstoke. The Chafer Beetles spend their larval stage as grubs in the soil, feeding primarily on grass roots. If turf is in short supply, the grubs may move on to feed on vegetable and fruit crops, shrubs, nursery plants and conifers. Since the grubs are rather large (approximately 25mm long), they attract wildlife such as crows, starlings, flickers, racoons, skunks etc., that dig up the grass in search of the grubs as a food source. The chafer has a life cycle of one year, with eggs being hatched in mid-July. The grubs grow and feed, typically about 5cm below the soil surface, until they become pupae around April. Adults emerge in June to fly to nearby trees to mate.

As the owner and operator of a landscaping business, I cross paths with many lawns with brown patches that look to be infested with the beetle grubs. We've all seen the lawns that have been ripped up by wildlife to feed on the grubs. After doing some research, talking to a few of my colleagues in the landscaping industry, as well as listening to what has helped several of my customers with this issue, I've come up with some ideas for environmentally friendly ways to manage this destructive invasive species in your lawn.



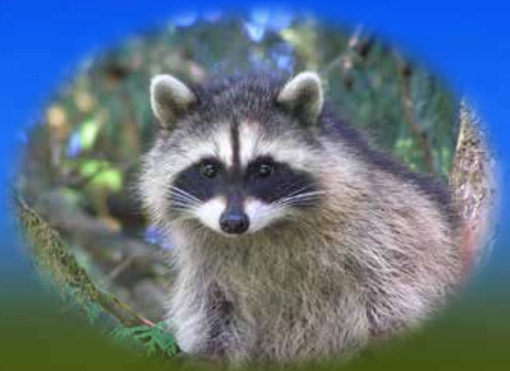
Preventing an infestation, or at least deterring the beetles from taking up shop in your lawn, is probably the most effective way to approach this issue, in my opinion. Keeping your grass as healthy as possible creates a dense, deep root system that will be more difficult for the beetles to navigate. This builds resilient grass plants that can more easily bounce back from damage. The process of creating a healthy lawn does take some work, and an understanding of the timing of various techniques. It also requires patience to allow the lawn to grow stronger over time.

- Here are some basic recommendations to help your lawn be as healthy as possible:
- Keep the length of your grass a little longer (around 8 to 10 cm). This helps to conserve moisture in the soil and promotes deeper root growth.
- Apply some dolomite lime to the grass in early spring (the package will instruct you on application rates). Soils in the Greater Vancouver Area tend to be acidic, so the lime helps many plants, including grasses, by keeping the ph from being overly acidic.
- Feed the lawn a top dressing of compost mixed with a little sharp sand, and then overseed with grass

seed and water deeply. This can be done several times between April and September.

- Aerate the lawn every other year or so, to open up the soil and promote root growth and plant vigor.
- In dry summer months, if possible, keep the lawn well-watered once or twice per week. The grubs thrive in dry, warm conditions.

As I was trimming trees this past fall at one of my strata contracts in Mission, I noticed that the chafer beetle damage was particularly obvious on many of the lawns. A friendly resident told me, that the reason



her lawn and garden looked so nice, was because she applied peppermint essential oil to the grass to deter the chafer beetles. My ears perked up. "I put about a teaspoon of peppermint oil with about a half a tablespoon of Dr. Brohner's peppermint liquid soap in a 1-liter spray bottle. Then I spray the grass with it about once per week when it's dry out, and more when it has rained" she said. Her lawn did look very nice compared to the other lawns around her place. I'm not sure how well this works. Some insects, including beetles, don't like peppermint. It may also deter wildlife from digging in the grass. It may be worth a try.

If you already have an infestation and wildlife damage, you can also treat the grubs with predatory nematodes in the third week of July or early August. Timing is very important, as is watering well before and after applications. You can now buy the nematodes through most garden centers.

Another option is to replace the lawn entirely with other groundcovers or plants that are resistant to the beetles. West coast seeds offers a variety of choices: white or micro clovers are great choices; tall fescue grass, moss gardens, and creeping thyme can all look beautiful. Depending on the size of your yard, this may or may not be suitable for you.

Xeriscaping can also be a good choice, depending on the site. This is a process of laying down heavy duty landscape fabric over the entire area and covering the site with some kind of mulch (often river rock, though it can be many other things such as bark mulch, pea gravel, etc.). Then thoughtfully plant shrubs and/or trees into the setting. This is a common technique used by landscapers.

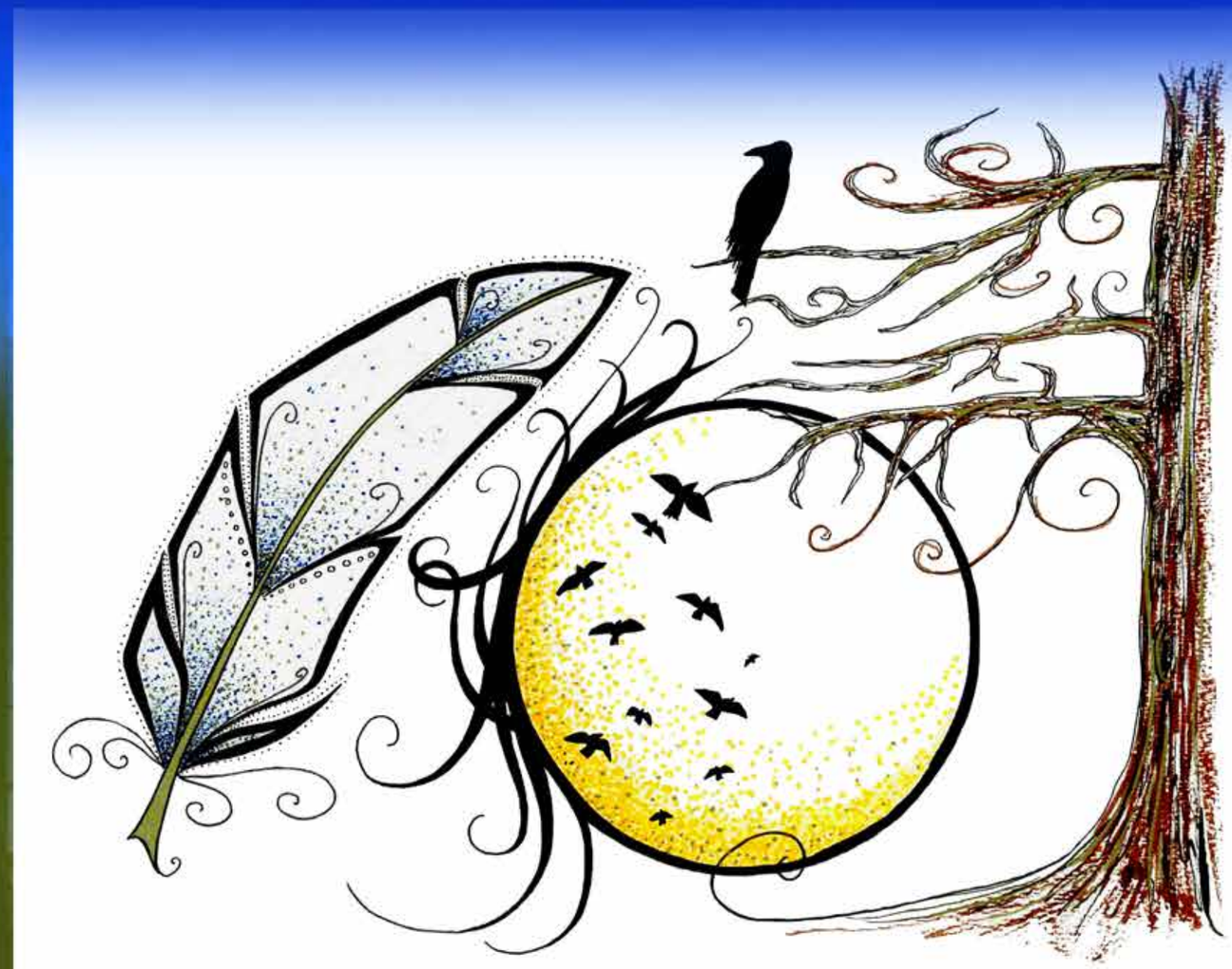
I hope this information helps to inform you of at least some of the many approaches that one can take to mitigate the damage done by the European Chafer beetle. Feel free to get in touch with me, or my company, Frost Pocket Landscape and Greenhouse, for further consultation, or to help you implement any of the above-mentioned strategies.

Skye Brooks
drummergardener@gmail.com
www.frostpocket.ca

Two crows on the lawn photo courtesy
Caroline Langbroek.
Racoon photo courtesy **Bruce Klassen.**
Crow photo courtesy Rick Skerry.

Spó:l / Stsitsá7 "Crow"

I created this piece in 2016 as part of a series reflecting "Earth's Natural Treasures" which was an art exhibition put on during the Apricot Tsaqwem Festival held within the traditional lands of the T'it'q'et people. It reflects crows in winter, flying back home at sunset. This art piece was created on heavy watercolour paper with fine tip-coloured markers.



I chose to incorporate both the Halq'eméylem and Sṯáṯimcets languages from the Stó:lō and St'at'limc Nations into my art pieces to honour the languages of both where I am from and where I live. I am a Xwísten member but have been a part of the Máthexwi community for over two decades.

Vanessa Serroul

The Humble Bumble

You hear a Bumblebee before you see it, a familiar deep hum, the nodding of a flower, drawing you to look and witness one of nature's most ancient rites. It is hard not to smile when observing a bumble. Its large fuzzy body is perfectly designed for gathering both pollen and nectar. Bumbles are one of the hardest workers on our farm.

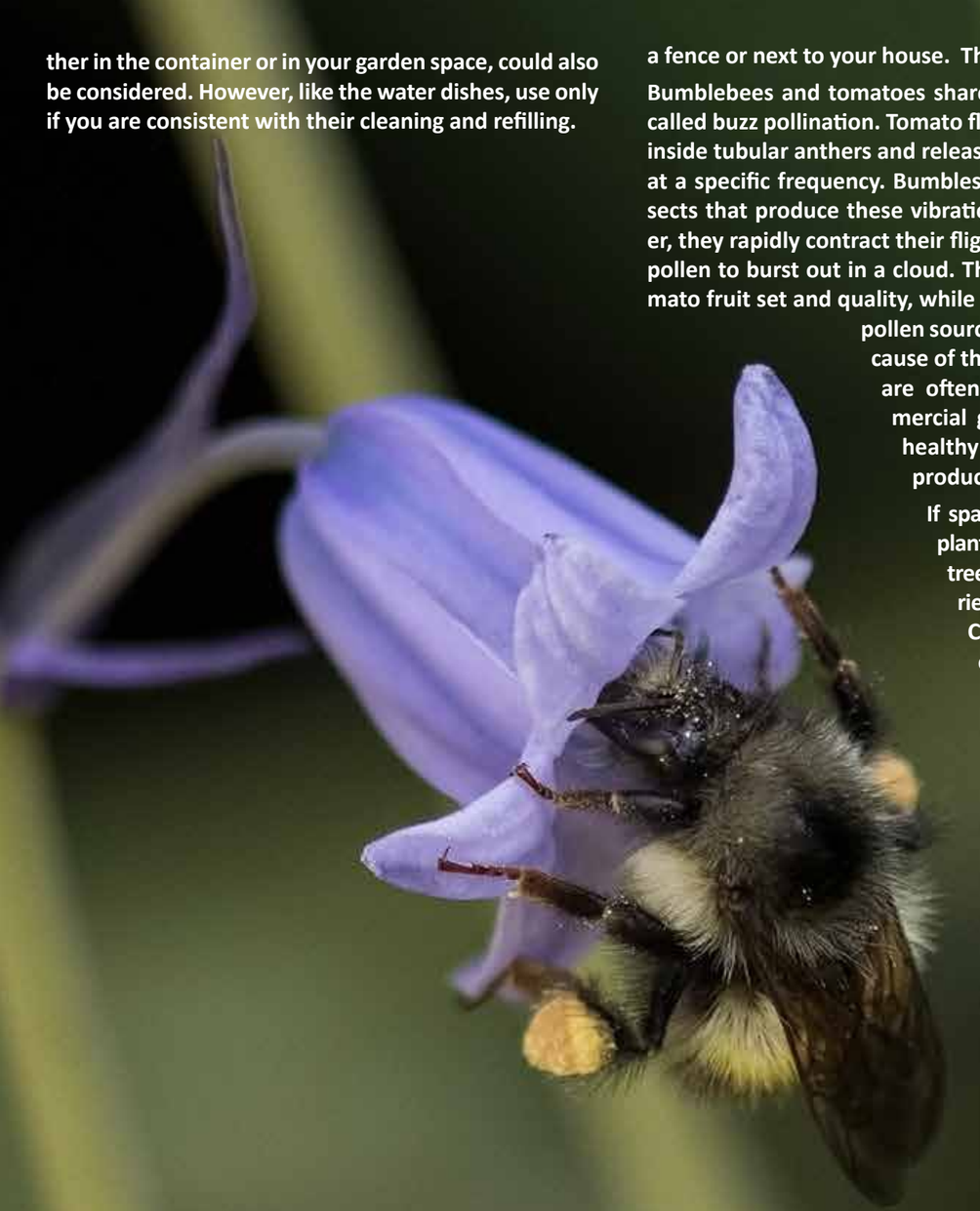
I was honoured to witness a new queen's first day. She emerged from our sons' forgotten sand pile and warmed herself in the mid-March sun. Ever since, we've made a point of enticing some of BC's thirty-two types of bumbles to our farm. Bumbles don't create enormous hives; fifty offspring are typical for an underground colony. Tempting bumbles, and other beneficial insects to stay, is as easy as creating a "bug hotel", and planting a few bright annual/perennial flowers and some vegetables if you have room.

To make a bug hotel, choose a quiet spot in your yard about a meter square. Work in layers, starting with a thick bed of leaves, then small branches. Add a few small piles of sand, a flat rock or two, a shallow pebble-filled water dish, perhaps an upturned cracked ceramic pot…and let it be. Yes, it will look a bit untidy. Feel free to employ your artistic talents with natural, non-toxic elements. The bumbles, lady bugs, possibly newts and garter snakes won't judge their new home, which is the perfect year-round accommodation.

Bumble hibernation is a survival strategy for newly mated queens only. After the summer colony dies off, each young queen finds a sheltered spot (loose soil, leaf litter, or small cavity) where she burrows into the ground. As temperatures drop, her metabolism slows to conserve energy; relying on fat reserves built up in late summer. In spring, the queen emerges, laying her first batch of eggs, then caring for those first workers who will rebuild the colony.

Creating a pollen and nectar garden doesn't need to be huge; a decent sized pot works nicely. Plant in layers, starting with Cat Mint aka Cat Nip. Low growing, slow spreading, Cat Mint blooms profusely from spring to late fall with small tubular purple flowers. The leaves can be dried or used fresh either for your cat or a refreshing tea for you. I don't find it attracts cats into our gardens. Choose shorter varieties of easy-care flowers that bloom consistently such as dahlias, zinnias, marigolds, or calendula. If you have room, the taller versions add a nice height and drama. Perennial grasses also add height and movement, work well as hiding places, and are striking in the fall. Hummingbird feeders, on a sturdy metal rod, ei-

ther in the container or in your garden space, could also be considered. However, like the water dishes, use only if you are consistent with their cleaning and refilling.



Herbs and tomatoes make striking combinations in a garden or in a large container. Mints, other than cat mint, should be contained! Beneficial insects love it, but it spreads quickly underground and can become invasive. Choose perennial herbs like lavender, sage, thyme, rosemary, and parsley. These can be interspersed with annuals like cilantro, basil, and nasturtiums, along with patio-sized tomatoes. If you have room, consider zucchini or mashed potato squash. Both are compact plants producing large pollen-filled flowers. Tucked in amongst flowers, their large spotted and serrated leaves add interest. Of course, include Sunflowers! Grow them along a fence or next to your house. The varieties are endless.

Bumblebees and tomatoes share a special relationship called buzz pollination. Tomato flowers hold their pollen inside tubular anthers and release it only when vibrated at a specific frequency. Bumbles are one of the few insects that produce these vibrations. Grasping the flower, they rapidly contract their flight muscles, causing the pollen to burst out in a cloud. This greatly increases tomato fruit set and quality, while the bees gain a reliable pollen source for their colonies. Because of this synergy, bumblebees are often introduced into commercial greenhouses to ensure healthy and abundant tomato production.

If space is available, consider planting shrubs and small trees. Oval-leaved Blueberries and Red-Flowering Currants are native choices in the Fraser Valley. Dragon's Tongue Willow can be kept compact and adds year-round interest. Oregon Grape, Beauty Berry, Azaleas, Rhodos and dwarf fruit trees add flower variety and beauty.

Attracting bumbles is about welcoming them with reliable food, water, and shelter. When you create an ecosystem like that, bumbles will return the favour with vibrant life and abundant pollination. With a few considered choices, your balcony or garden can become a thriving sanctuary for these and other essential pollinators, while creating a beautifully productive space for you.

Cat Wong,
Hatzic Humble Roots Farm

Sunflower and bumble bee photo courtesy **Cat Wong.**

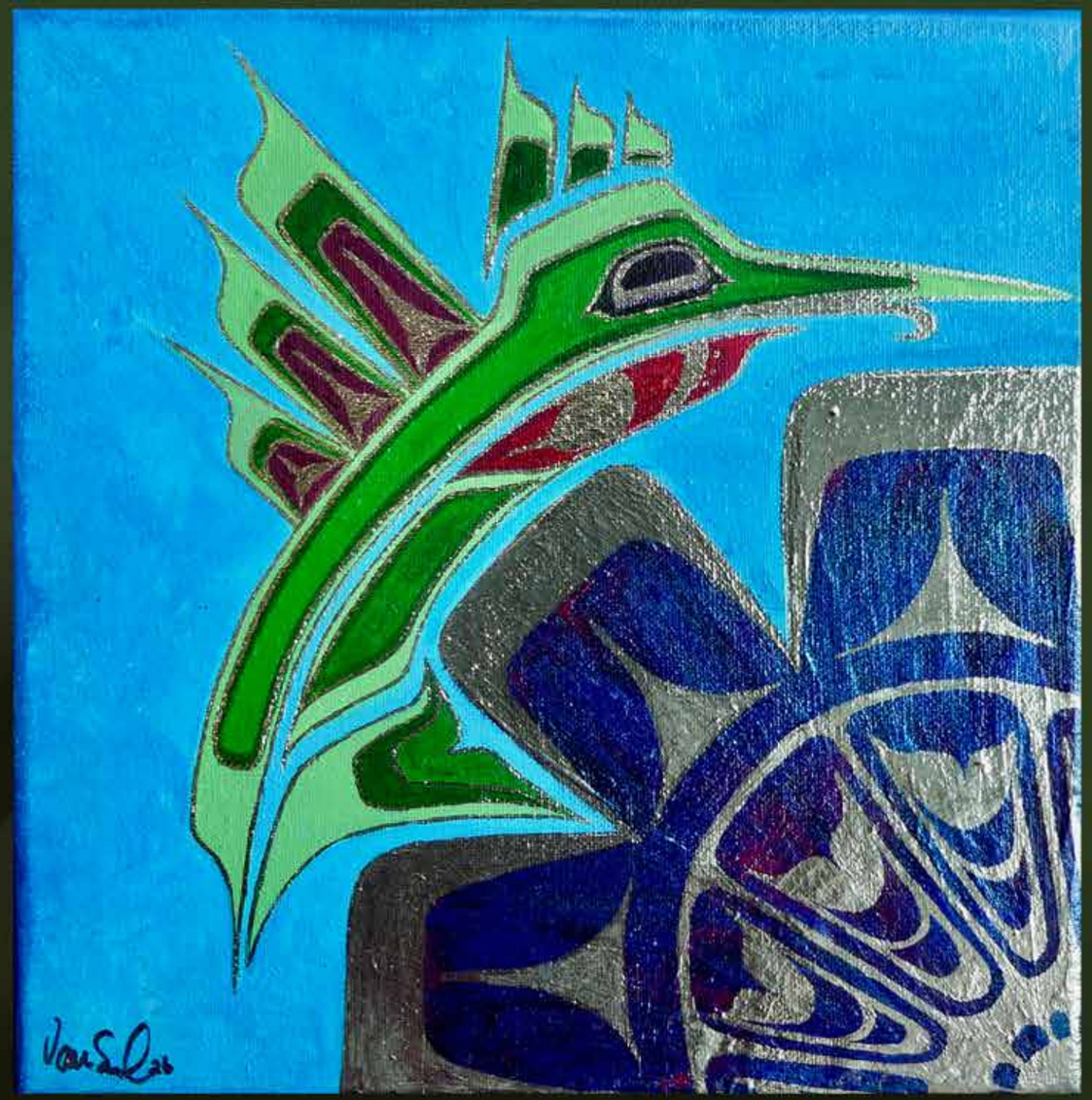
Bumble bee and purple flower photo courtesy **Rick Skerry.**

Bumble bee and Red-flowering currant photo courtesy **Mike Stefiuk.**

Pesk'a / Pv´sk'a7 "Hummingbird"

The artwork depicts the ruby-throated hummingbird taking nectar from a wildflower. There are many hummingbirds in our area that come to visit us, usually in the spring and summer when our flowers are in bloom, but we get the occasional one in the winter, usually telling me off for not having the feeder out. Hummingbirds are pollinators and Insectivores and are important to our ecosystem so it's important to keep them safe by not feeding them store bought nectar that contains dyes and preservatives that are harmful to their health. I created this piece on a 10"x10" wrapped canvas using acrylic and mirror chrome paints.

Vanessa Serroul



Lowering your AI Footprint

This article comes with a caveat that it is not techno-phobic; rather, it tries to be realistic. Recently, many climate NGOs in Canada, and around the world, have been showcasing the environmental dangers that result from Artificial Intelligence (AI) data centres: with good reason. Yet there are things that you personally can do.

Most people aren't aware that AI use is substantially different from simple computer use in the vast amount of electricity AI requires, and how it will increase exponentially through the accelerating pace of AI development. MIT Technology Review (May 20, 2025) outlines the dangerous levels of greenhouse gas emissions of AI use and development. That's because currently, the majority of data centres for AI transmission are located in US States where electricity is fossil-fuel generated (and likely to increase). In 2024,"Data centers in the US used [in] electricity . . . roughly what it takes to power Thailand for a year." Related to the power draw of AI is its vast consumption of water, since the technology generates a significant amount of heat that is water cooled, mostly evaporated, and not returned to the watershed.

Such problems, however, aren't just confined to the US; Canada has several proposed data centre projects at the moment (1).

A current BC example — proposed for Nanaimo — has drawn heavy criticism with estimates that the centre could use up to 70,000 litres of potable water a day. This is in an area noted to be frequently drought stricken. No-one really knows the exponential increases that will come from future expansion of this centre. The situation is very murky right now, yet citizens rightly deserve clarity (2).

Certainly, AI development must align with our ethics regarding human values including climate ones

At a bare minimum, governments must require that AI data centres be powered through renewable energy sources (preferably wind and solar) and cooled by means that don't threaten to over-tax the municipal water systems upon which communities rely.

What can you personally do in the meantime? If you use Google as a search engine, from now on try this strategy: in its menu bar, type in the search term(s), leave a space, then type -AI. This method will exclude the auto AI generation that has become a google standard, and you'll be doing your small part to limit AI use. Even better, though, you can switch internet browsers to the free, non-profit, environmental search engine: ECOSIA (3). From tree planting, through privacy security, to di-

minished AI use, this browser offers you an environmental choice. But most importantly, stay informed as much as you can around AI and its environmental impacts, so that when your local and provincial government officials are lured by data centre's alleged economic benefits, you are armed with the true costs and can counter their questionable claims.

Avril Torrence (co-chair)
South Okanagan Chapter, Council of Canadians

Flying crow in snowstorm and Eagle with crow photos courtesy **Rick Skerry.**

Endnotes:

1) https://www.cbc.ca/news/ai-data-centre-canada-water-use-9.6939684

2) https://thediscourse.ca/nanaimo/whats-the-deal-with-the-proposed-data-centre-in-nanaimo

3) https://www.ecosia.org/

Restoration Plan to Repair Norrish Creek Habitat Damage fails to Achieve Goals: Big Trouble for Salmon, Part II

In May, 2021, Fisheries and Oceans Canada (DFO) issued a Letter of Advice (LoA) to CPKC Rail. It granted CPKC the right to extract gravel from Norrish Creek for flood control "immediately above and below" the railroad's bridge, on Hawkins Pickle Road, east of Mission. However, in January, 2025, fisheries experts John Werring and Dr. Marvin Rosenau, condemned "massive" amounts of extraction, including three deep holes .6km below the bridge.

"Norrish Creek is typically a single stable channel," said Rosenau. However, "because they took so much gravel, the main channel of Norrish Creek ended up degrading vertically and laterally." Werring and Rosenau say massive gravel removal lowered the water table in the stream's aquifer by 3-4 meters, shutting off groundwater to eight salmon streams including Worth Creek, which was bone dry in December 2024 (See Footprint Press Issue 30 & Maple Ridge News (1)).

For the newly formed Norrish Creek Gravel Stewardship Group (NCGSG), the questions were: How could this happen on DFO's watch? and What could be done to reverse the impacts on fish habitat in the watershed? (2)

In April, 2025, Werring received an explanatory email from DFO's Fish and Fish Habitat manager, Brenda Rotinsky. "In 2024, the bedload (riverbed) removal location deviated substantially from the proposal reviewed by DFO. CPKC did not notify DFO of the changes, nor request DFO review them in advance." Rotinsky adds, The DFO has since met with CPKC "to re-iterate concerns about the impact on fish habitat in Norrish and Worth Creeks as a result of bedload removal activities since 2021, and DFO's expectation of actions to be taken to remedy the issues… DFO has also rescinded the Letter of Advice, and ordered a halt to gravel extraction by CPKC without a formal Fisheries Act permit." And, says Rotinsky, "DFO has instructed CPKC to implement a 'Restoration Plan' aimed at correcting long-term concerns at the site."

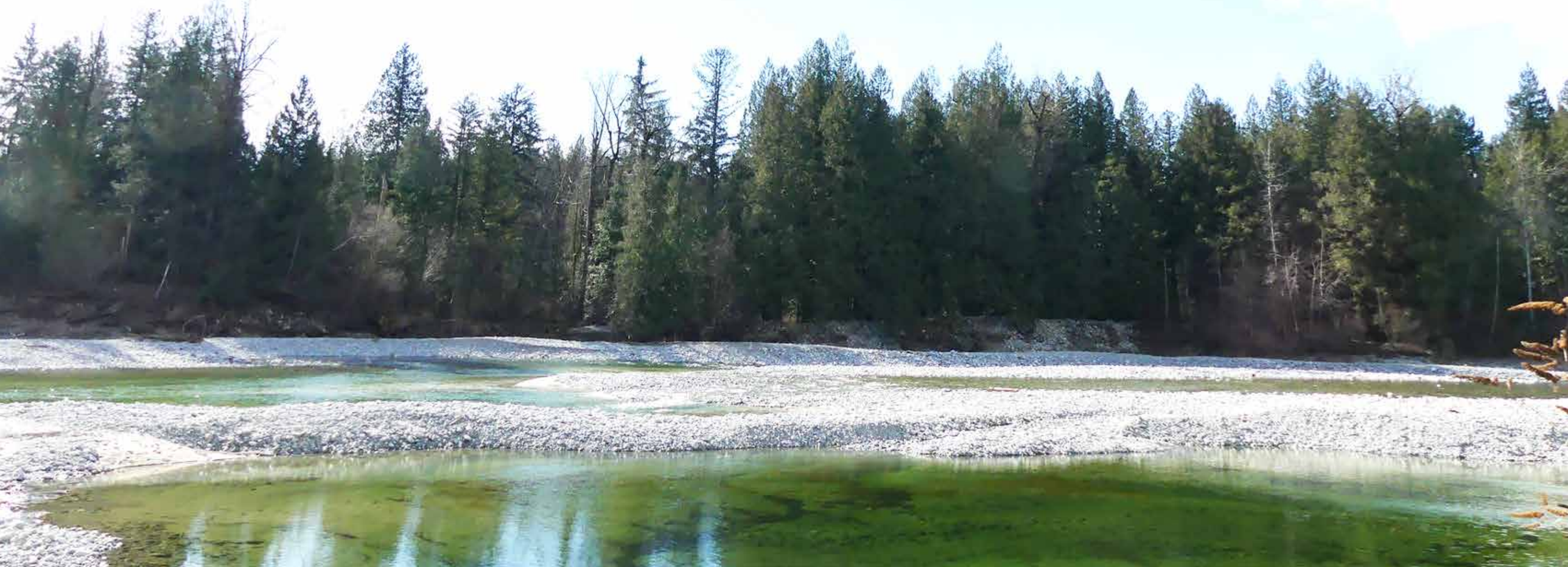
Last summer - in a Zoom meeting with NCGSG - DFO said remediation set for Sept. 2-5 would include constructing two pilot channels, to allow water to flow from Norrish to Worth Creek, and two large 'apex jams' (i.e., log and rock structures) at the channel entrance on Norrish Creek. These steps were intended "to restore a multi-channel morphology fortified with larger rock to diversify habitat, encourage flow split and scour in the pilot channels in Norrish Creek, and encourage more creek flow to the area in and about the confluence of Worth Creek."

Werring was sceptical. "Worth Creek is above the level we're standing on," he observed in January, 2026. "How is water going to flow uphill? It makes no sense. The channels will merely collapse because there are no armoured banks anywhere along channel sides. The fine sands left in the excavated channel beds will be entrained downstream on the first flush, causing significant habitat damage downstream."

In February, 2025, redds (i.e., salmon nests) in the second channel, which had been heavily spawned in November, were buried under a foot of sand. "It's a bloody joke," said Werring, "a make-you-feel-good project. The original channel wall (about 3m high on the upside) is still there, but, on the north side, a wall of similar height no longer exists. It's loose cobble, gravel and sand. I warned DFO, that all it would take is a significant amount of rainfall to shift that, and that is what has happened. It's now mobile and disruptive. The river will be more unstable and further vertically degrade, lowering the groundwater aquifer even further. When you mine gravel in rivers, you disturb the armoured layer of the stream, so that anything that was there, is now loose, and will move at higher water flows."

In January, 2026, during a DFO and NCGSG on-site visit, DFO staff agreed on ideas for restoring groundwater levels, including pulling down the dyke constructed along the east bank of Norrish Creek to fill the deep pits in the stream bed, and placing large boulders in-stream, to recruit and retain gravel, to restore the stream bed. This, said Werring, "could restore groundwater levels, and increase the downstream flowthrough at the bridge." Other ideas discussed included replacing vegetation removed during gravel extraction, (a requirement under the LoA), and remediation in the lower end of Worth Creek which has become overgrown and plugged with sand. Werring added, "We would like to know what DFO is planning to do, to ensure remediation actually achieves the objectives specified in the original 2021 LoA."

In Feb. 2025, Rosenau filed a freedom of information request for all information about gravel extraction in Norrish Creek since 2000. It reveals that several DFO staff had expressed concerns about gravel mining for years. On Sept. 26, 2022, Natural Resources Officer, Brian Bubela reported Norrish Creek was completely dry, with "water flowing into massive pits instead



of downstream." On Dec. 2024, DFO biologist, Rory Cleveland, reported "the mouth of Worth Creek was completely dry from Dec. 2-6…impeding fish passage for coho spawners. The creek did not run dry like this in 2022/2023." Bubela says "gravel extraction in Norrish Creek has impacted the water table and lowered subsurface water inputs into surrounding creeks." In 2024, Matt Foy, a former DFO enhancement officer in the 1980s, reported, "in 1984 there were 500 coho and 7240 chum spawners in Worth Creek (compared to 167 chum and 2 coho for 2025-6 at last count)." He added, "I assume all (DFO) parties will be talking about how to restore the Norrish Creek aquifer to Worth, Railroad, Hawkins, Inch, Barnes, and Chilqua Creeks as soon as possible". He suggested ways to do that, and added "I hope decision makers will learn from this event and do better in the future. This is as ugly a gravel removal impact as I have seen in my 45 years in the business."

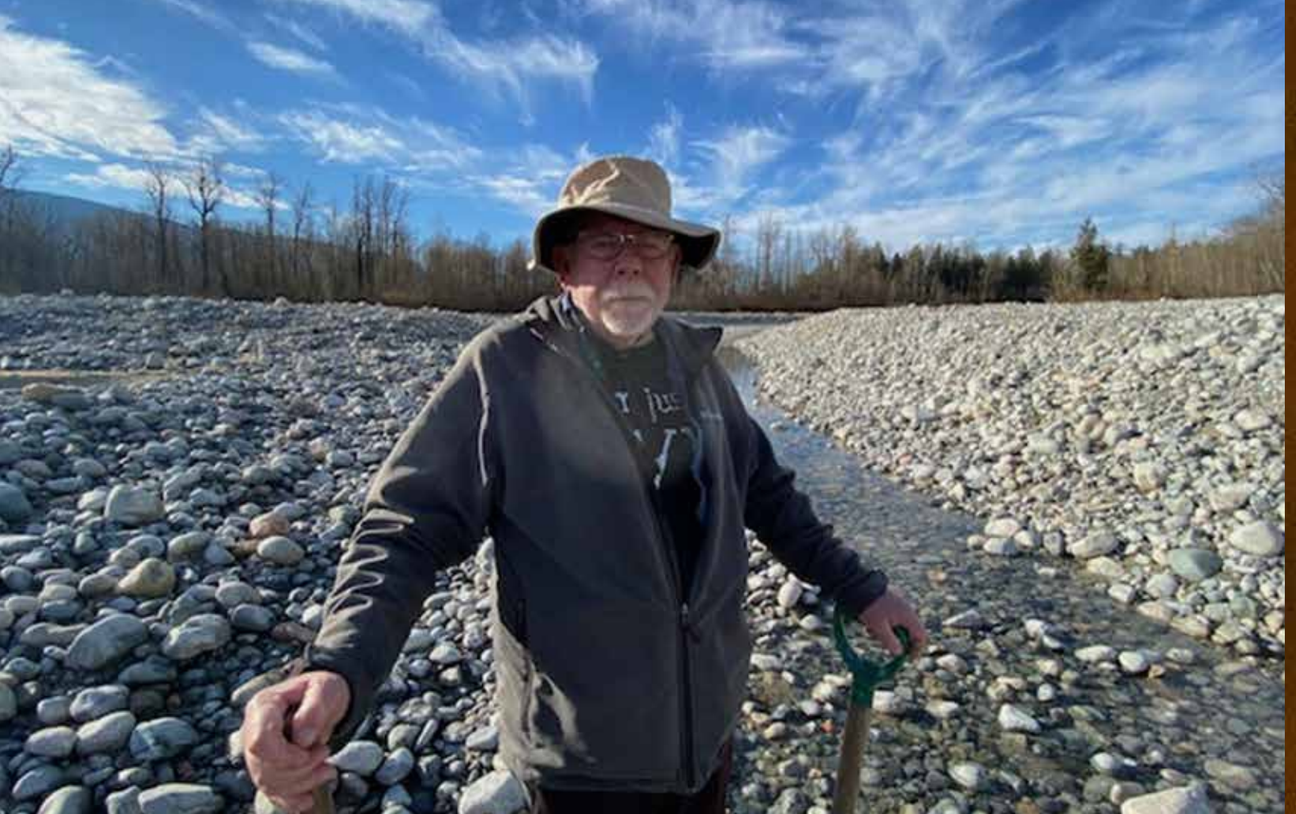
Jack Emberly, Maple Ridge

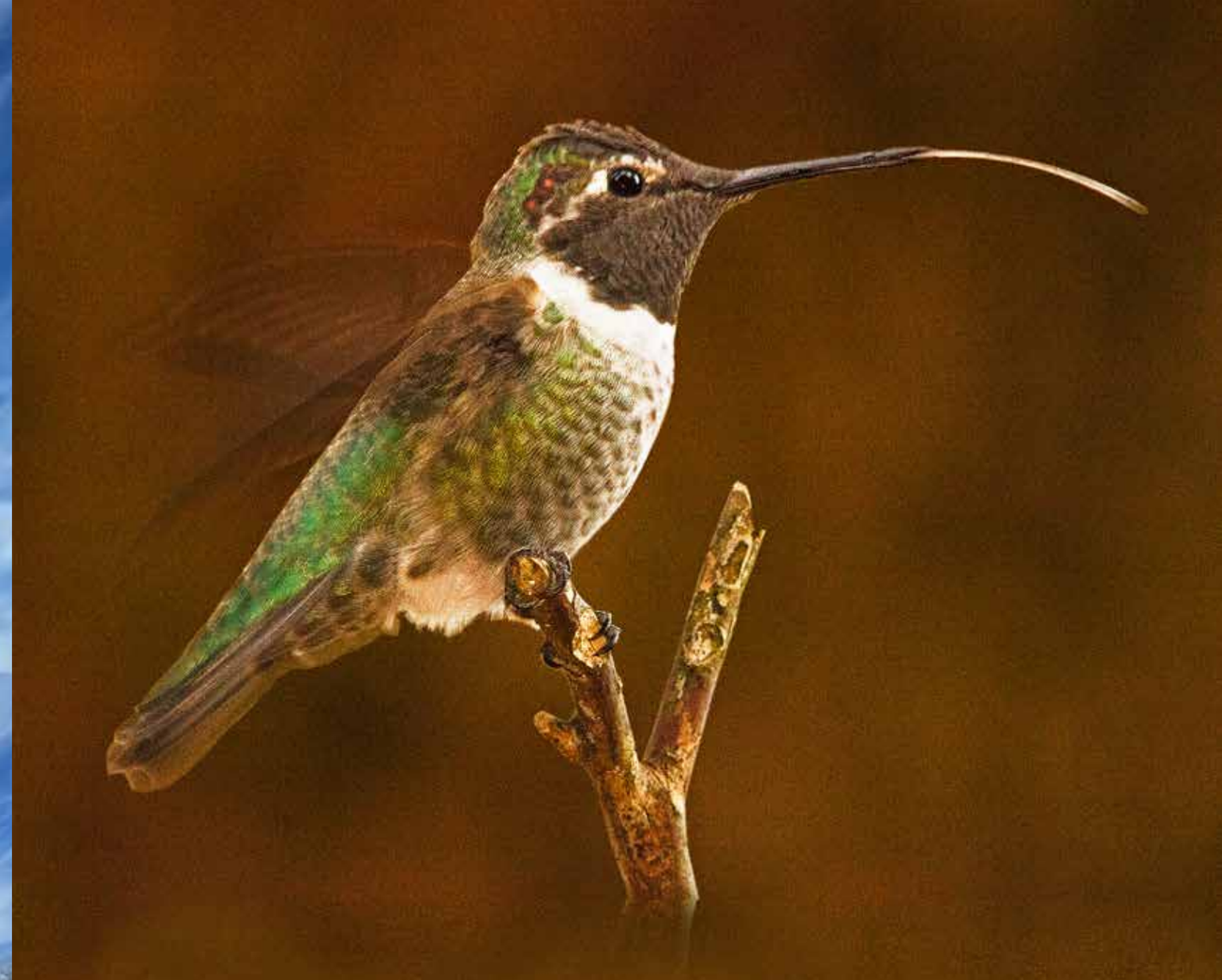
John Werring photo
courtesy **Jack Emberly**

Endnotes:

1) https://mapleridgenews.com/2024/12/24/along-the-fraser-fluctuating-creek-levels-destroy-thousands-of-salmon-eggs/

2) https://watershedwatch.ca/stories/norrish-creek-is-in-trouble-were-calling-for-a-halt-to-gravel-mining/ng/





Hummingbird

Hum Hum little hummingbird, why do they call you that?
Mystery of the morning, delight of the afternoon,
Wicked wings whisper your arrival
The eerie carnival of acrobatic flight, the
kaleidoscope of movement, apogee and yaw
Scary stops, Starts and Turns, a visitation,
Life from elsewhere.

This darning-needle on an emerald,
shimmering friend, or foe?
I see you fueling at the flower rim,
the essence of the heart within.
Then off, little engine of the sky
for others to wonder who and why.

Biggest brain of all the birds
Why are you made so tiny?
You cannot walk you cannot run
to sit and stare is not much fun.
So cast your spells and make us ponder
What we are and what we wonder.
In your all seeing eye.

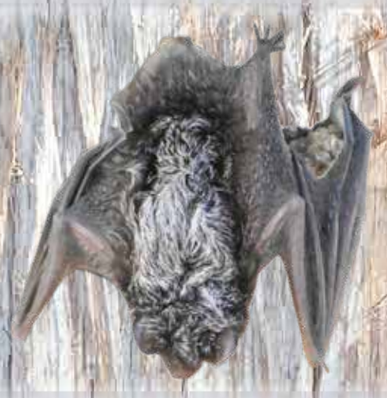
Jenna Stuart, Mission

Anna's hummingbird photo
courtesy
Bruce Klassen.

Bat Rescue at Edith McDermott Elementary

This article was written by students in Mrs. McLaughlin's grade 3-4 class, Edith McDermott Elementary school, Pitt Meadows. Additional research was compiled by Gabby, Sadie & Hazel.

Some students saw a bat on the large cedar tree at school. It blended in with the bark but it was black and white and moved a little. It was a Silver-haired bat. It stayed in the tree for a few days and then fell. Someone told the office and they protected it with cones around the tree. The office called a wildlife rescue association in Burnaby. They came and got the bat and rehabilitated it. The bat was not sick but was just dehydrated. After two weeks they brought it back and released it.



Facts about Silver-haired bats

Silver-haired bats are medium sized bats with dark fur tipped with silver, giving them their name. They can be found across North America and are often solitary, roosting in tree cavities and foraging for soft bodied insects like moths, flies, and beetles. A female gives birth to two pups after a breeding period in the fall and a delayed fertilization.

Silver-haired bats are slow but agile flyers. Their unique scientific name means "hairy wandering light bat".

Gabby

Silver-haired bats are dark coloured silvery tipped insectivores. They are known for their slow flight and preference for forested habitats. They roost in trees like hollows or snags and hibernate or migrate in tree cavities, under bark, or in caves. Silver-haired bats fly around 4.8-5.0 meters each second. This is roughly 18km/hour. The Silver-haired bat at our school had fallen out of a tree in the forest at Edith McDermott Elementary. We saved it and it was set free in the same spot we found it in!

Sadie & Hazel

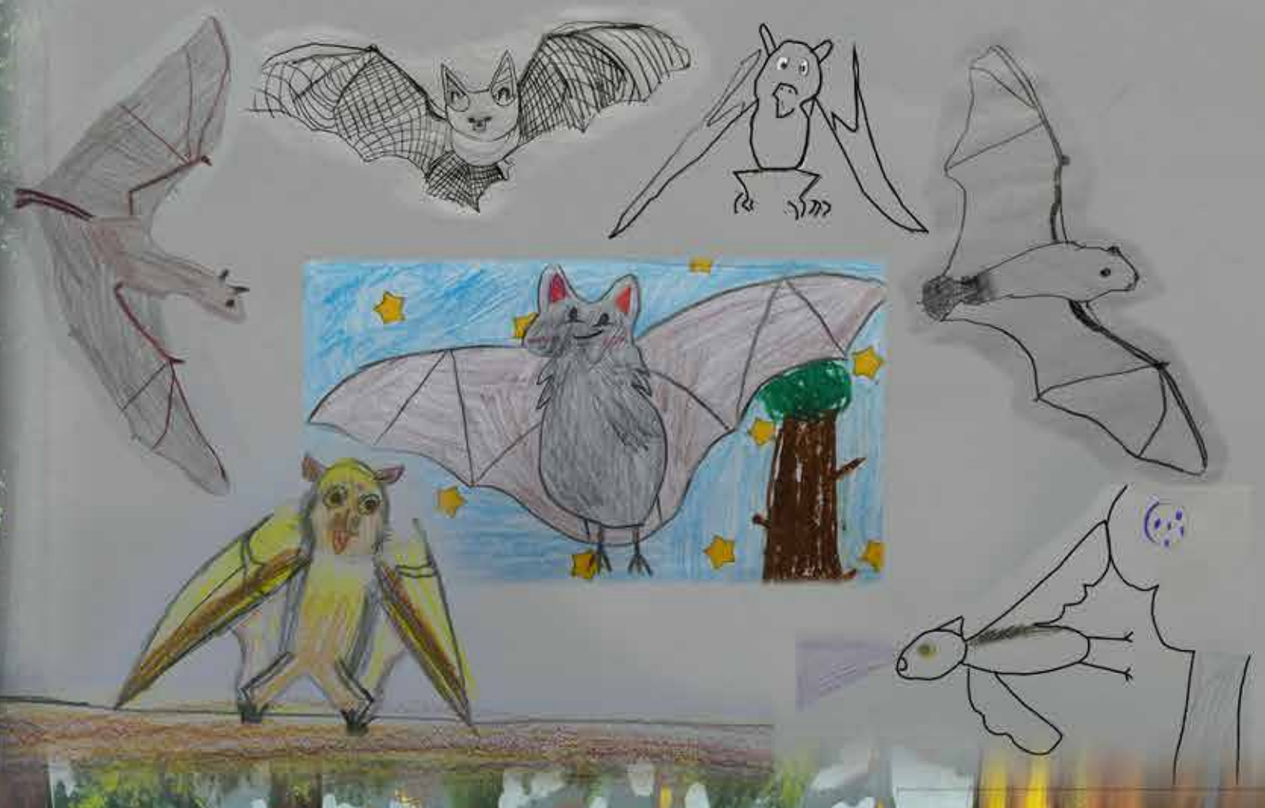
Artwork by **Brandon, Brynlee, Charlotte, Dylan, Gabby, Hazel and Sadie.**

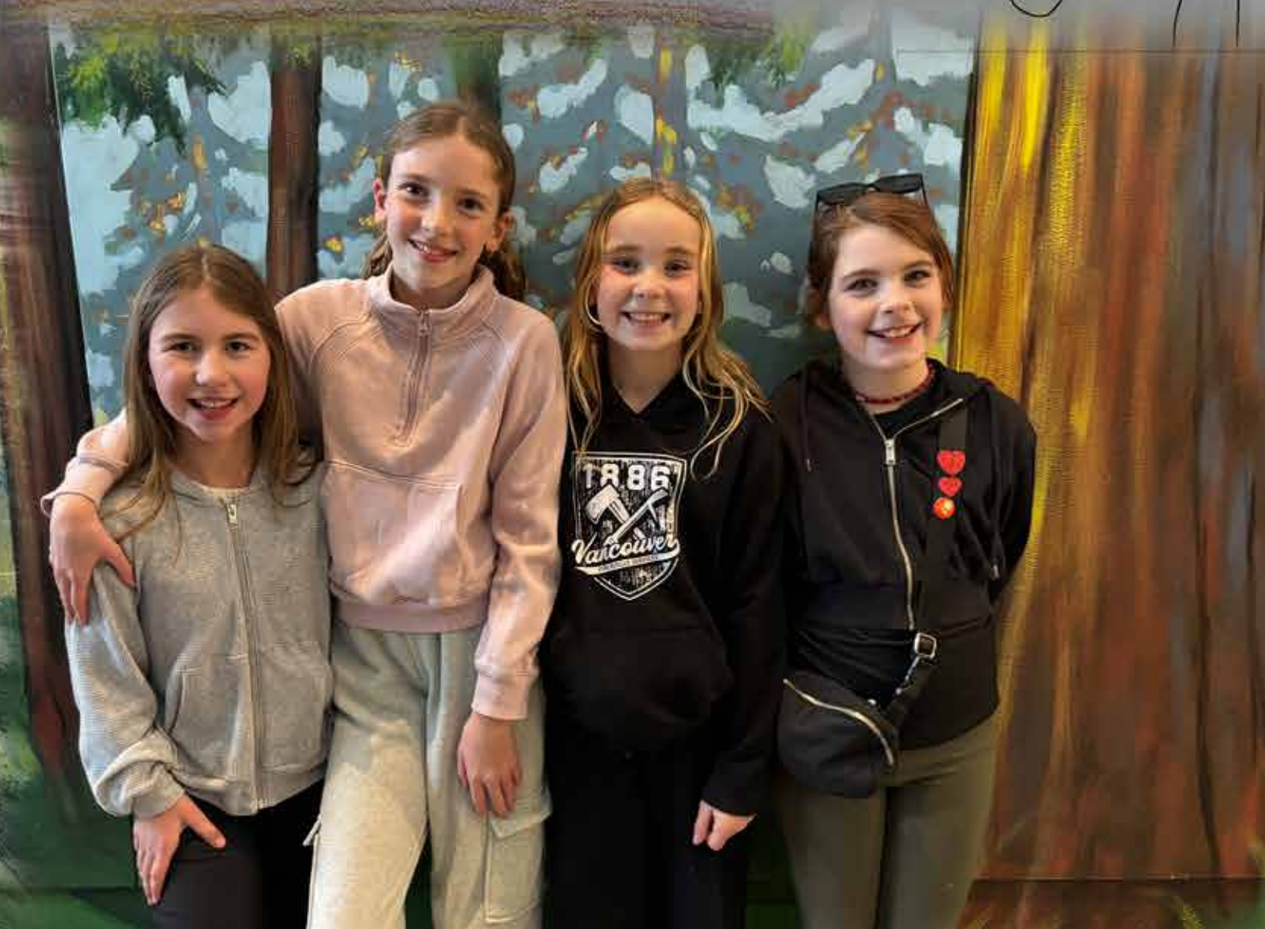
Editor's note:

Silver-haired bats are one of only two bat species in North America that sings.

In 2023, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assessed the Silver-haired Bat as Endangered because of dramatic population declines in recent years.

Congratulations to the EME students who rescued this endangered animal!





UPSTREAM

Like the salmon, I've wandered wide and far
Ya know it's been hard- Lost in the currents, I've been searching back
Raised in concrete jungles, far from ancestral lands,
But the call of my roots, like the river, still stands.

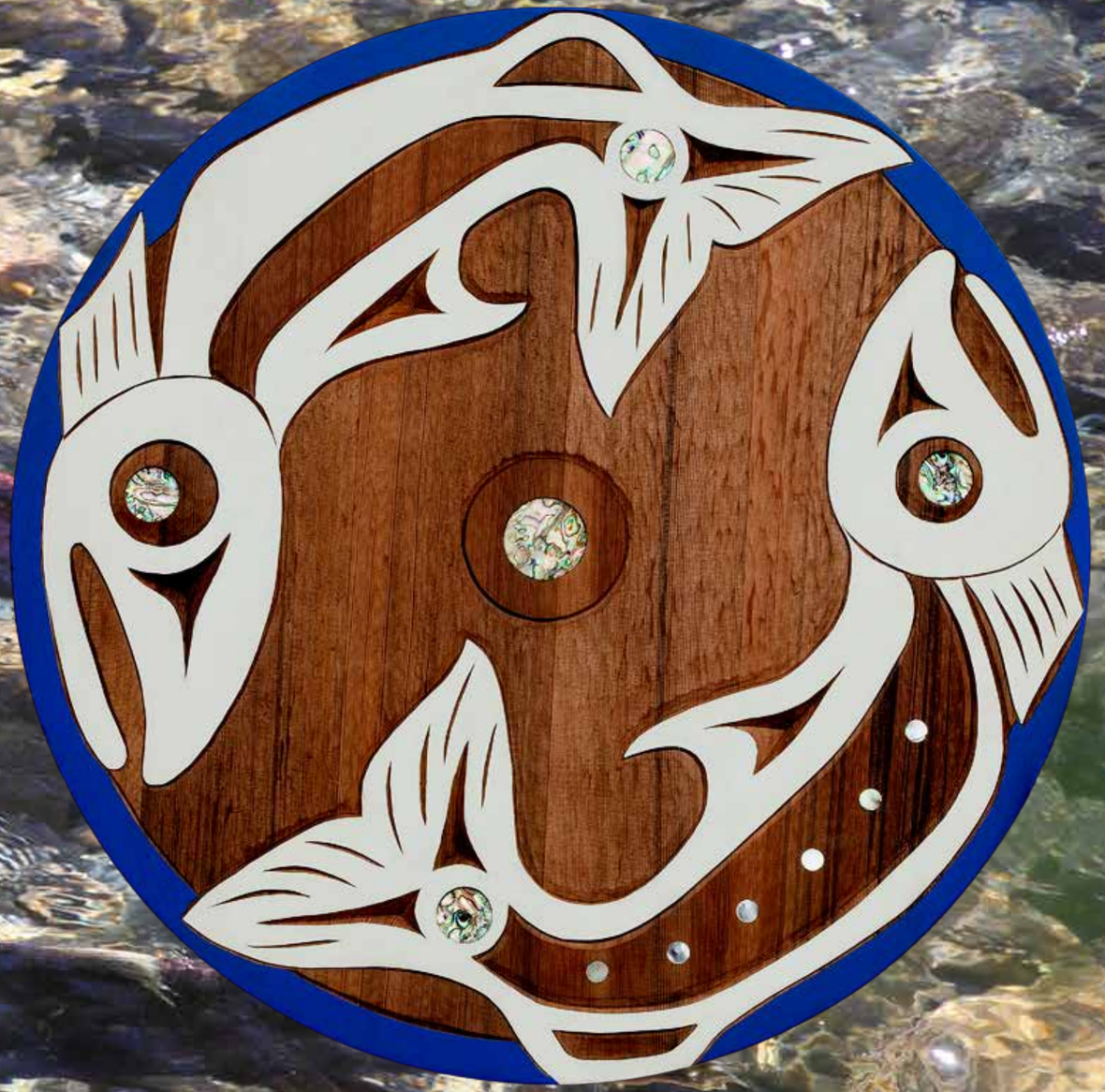
I've struggled upstream, against the urban flow,
Seeking the currents of my ancestors to know.
Many like me falter, swept away by the tide,
But I persevere, with ancestral strength by my side.

Through the wisdom of elders and the songs of the land,
I learn to navigate, guided by their hand.
In the embrace of nature, I find my true home,
Reconnecting with my culture, no longer alone.

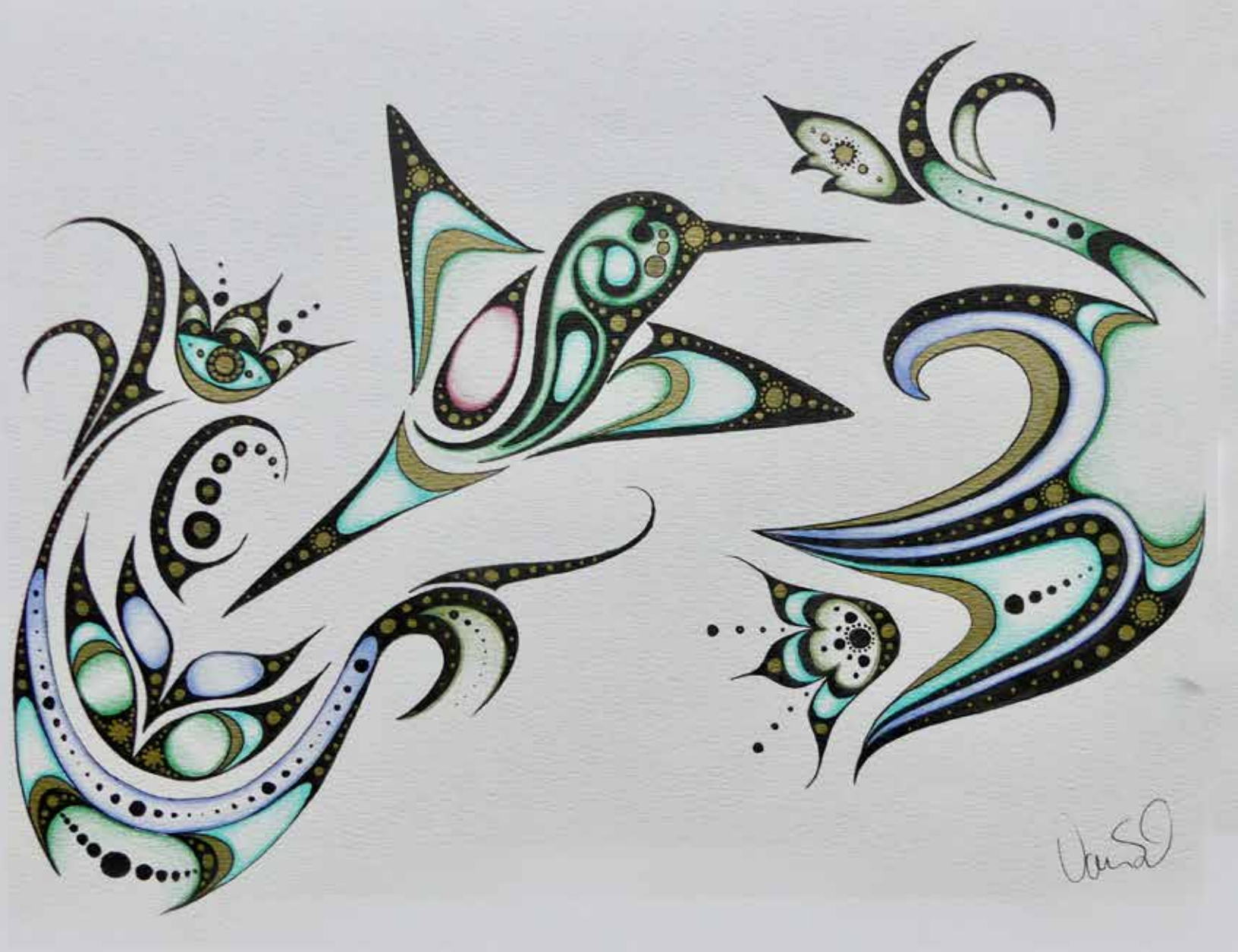
With each step
I honor those who came before,
Their resilience and wisdom, forever I adore. Like the salmon, I
embark on a journey anew,
Starting a cycle of life, embracing what is true.

As the salmon return, so too do I,
To the waters of my ancestors, under the sky.
In their sacred dance, I find my place,
An Indigenous woman, reclaiming her grace.

Through the rivers of memory, I navigate with pride,
Embracing my ancestors, no longer denied.
Like the salmon, I find my way back home,
A cycle of renewal, no longer alone.
Sayer Cedar



Salmon round carving by Peter Gong.
Salmon photo courtesy Mike Stefiuk.



Hummingbird painting by **Vanessa Serroul,** St'at'imc Nation (Xwísten)

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