

**Stoney Creek Trail Report
No. 49 - April 2023**



On the Front Page: a cup lichen with an unusual name: **Papa littlehorn pixie** (*Cladonia ochrochlora*). Its body consists mainly of small, crenulated leaves. The stalks (horns) that project out of the body will develop cups at their tips which will enclose spores. This particular fungus has been living for years on a decaying maple stump at the top of Hemlock Hill.

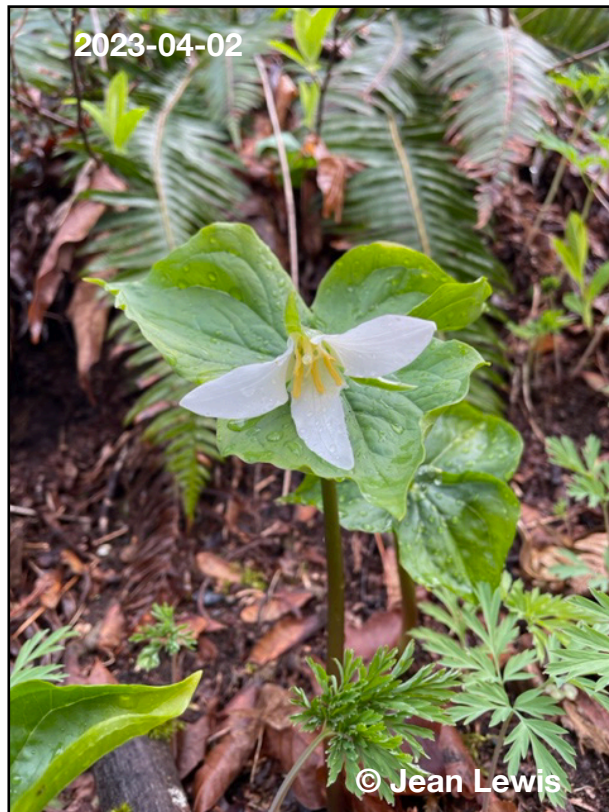
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You may not have noticed in my March Report that the article, "[A Memorial to Bridge 5](#)" was written by **ChatGPT**, not by me. I wanted to show you how this "chatbot" (artificial intelligence) can create a very literate composition on any topic. My instruction to it was: "Write a 250 word obituary for a destroyed wooden arch bridge across Stoney Creek." The results appeared on my screen in seconds, word and punctuation perfect. All I had to do was insert a few details [in brackets] and add the photos. If you've been

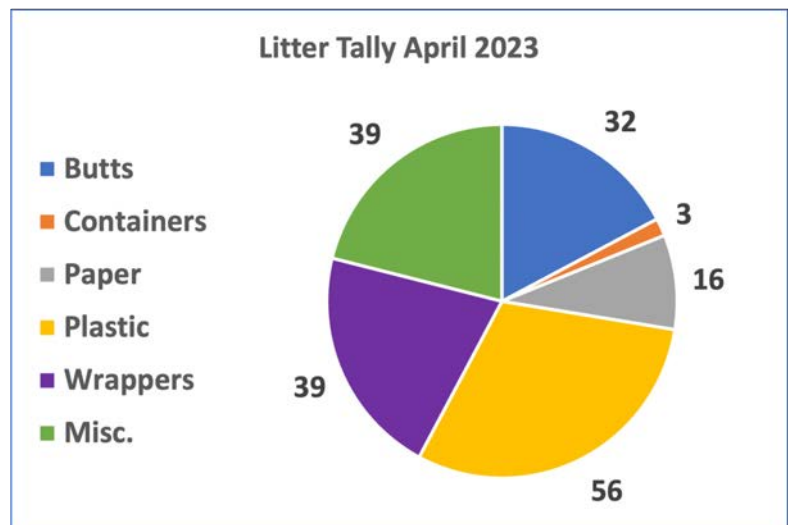
following the discussion about chatbots in the media, you will know that they are developing rapidly and becoming increasingly powerful. Many experts believe they will cause major changes to our society, like the internet has.

In March, I lost the use of my mobility scooter due to failed electrical components. For three weeks I was unable to do my usual Trail activities involving litter, photos and water temperatures. Fortunately, I now have the use of a nice "loaner" scooter. I've had to postpone doing survey of the small critters (invertebrates) that live on the bottom of the Creek. Instead, you'll see the results of a UFV student project.



Western trillium

Thanks to **Jean Lewis** (Lacey and Roxie) for providing a photo of one of this year's small crop of Western trilliums. There are a few that can be seen on the Trail early every April.



Miscellaneous: clothing, glass, chewing gum, balls & fragments, etc.
Wrappers: candy wrappers, foil, cellophane
Plastic: doggy poo bags & scraps, plastic bags
Paper: tissues, napkins, receipts, newspaper, cardboard, etc.
Containers: bottles, coffee cups, cans, juice boxes, bottle tops

Benthic Macroinvertebrates in Stoney Creek (1 of 2)

A water quality study carried out last fall by UFV students gave me the idea to feature another aspect of Stoney Creek: the small creatures (***Benthic macroinvertebrates***) that live on the Creek bottom. They are also near the bottom of the food chain and are a major source of food for the salmon fry. Thanks to **Bethany Nesbitt** and her classmates for providing these photos.

The macroinvertebrates the students found in the Creek include aquatic worms and leeches, and mayfly, stonefly, caddisfly and crane fly larvae. Others which they did not find but are very likely there are the larvae of midges, damselflies, dragonflies and mosquitoes, as well as juvenile crayfish.

Aquatic worms and leeches can tolerate poor quality water. On the other hand, caddisfly and stonefly larva are pollution intolerant: they need clean water to survive. The fact that they were found by the UFV students indicates that the water quality of Stoney Creek is very good.

Aquatic earthworms (*Oligochaeta*) closely resemble terrestrial earthworms. Most aquatic

worms range in length from 1-30 mm, although some may be up to 150 mm.

Because these worms undergo no metamorphosis as they age, juveniles can only be distinguished from adults by their smaller relative size.

Aquatic earthworms burrow through the upper layer of soft, fine sediment, grazing on bacteria, protozoa, algae, and dead organic matter. Their feeding behavior stirs the sediment, keeping it aerated and providing oxygen for other organisms.

Aquatic earthworms can absorb oxygen over their entire surface area. Because they can breathe in low oxygen conditions and eat detritus, they can be found in virtually all aquatic habitats.



Mayfly nymph



© Bethany Nesbitt

Aquatic worm

Benthic Macroinvertebrates in Stoney Creek (2 of 2)

Freshwater Leeches are parasitic, predatory worms. They are closely related to earthworms, having soft, muscular, segmented bodies that can lengthen and contract. Unlike earthworms, they have suckers at both ends, the rear one being used only for locomotion. Leeches will often be seen suckered onto objects in the water. They can swim, but typically they use their suckers to get around, using a looping movement.

There are many species of leeches. A few kinds will prey on small invertebrates, but most usually prey on vertebrate hosts, attaching themselves with the front sucker, injecting an anaesthetic and feeding on the blood. They digest food slowly and can go for months between meals.

Leeches breathe through their body walls and have sensory organs that enable them to detect light, temperature changes and vibrations. They are not as sensitive to water pollutants as fish.



© Bethany Nesbitt

Leeches



© Bethany Nesbitt

Salmon egg

Leeches reproduce in the spring. They are hermaphrodites, but can also reproduce through reciprocal fertilization. The mother leech forms a tough, gelatinous cocoon around the egg mass and attaches it to a hard object or buries it in the sediment. The cocoon contains all the nutrients that the young leeches need to survive, and they emerge several weeks later. They can live for several years, but most leeches only reproduce once or twice in their lifetimes.

Leeches are mainly nocturnal. They are attracted to disturbances in the water which might indicate food sources. They live mostly in shallow water with many hiding places. They are important in the food web as they are both predators and prey. The leeches of North America are not nearly as serious a pest as tropical leeches. However, ours can be bothersome to people in areas used for swimming. [More: [Field Studies Council](#)]

The American Salmonfly



The American Salmonfly (*Pteronarcys dorsata*) is a species of giant stonefly. Stoneflies are rather primitive creatures, having simple chewing mouthparts, long antennae and large compound eyes. They have strong legs, each ending in two claws. They are distinguished by the complex pattern of veins in their two pairs of long, slender wings that close tightly around their bodies. They have a dark neck collar bordered in bright orange and long, black antennae. Their legs resemble those of beetles. Including their antennae, they can be 6 cm in length. Look for them along the Trail now.

The larvae (nymphs) look like little crustaceans. They are aquatic, living on the bottom of lakes and streams, and herbivorous, feeding on

submerged rotting plant matter and benthic (bottom-dwelling) algae. They acquire oxygen through gills on several parts of their body. They need well oxygenated water and are very sensitive to water pollution, so their presence in a stream is an indicator of very good water quality. Where there are Salmonflies, there are fish.



Adult American Salmonflies do not eat and have short life spans of less than a month. Because they are not strong fliers, they generally stay near the stream or lake where they hatched. They rest on rocks, reeds and branches near or above the water, waiting for an opportunity to mate. If adults are threatened, they can release a chemical irritant or, if that fails, they may play dead.

The females fly over the water, dropping fertilized eggs which typically take two to three weeks to hatch. The young remain in the nymphal form, growing and undergoing several molts before leaving the water when they mature into winged adults. Their empty shells (exoskeletons) can be seen abandoned not far from the water's edge.



This Month's Trail Dog



"**Archie** is a Golden Mountain Doodle. His dad is an English Cream Golden Retriever and his mom is a Bernedoodle (a Bernese Mountain Dog and Standard Poodle cross).

"Archie just turned two years old and he is a very big boy. He is presently 110 lbs of pure love and he thinks he's a lap dog!!

"Archie loves to play with his friends at Stoney Creek and always loves to say a big hello to his pup friends' parents too!

"There are a number of squirrels who like to tease Archie as they run up the trees... but he won't give up the chase."



Signs of Spring



Top: a fully developed Red currant flower; unfurling Hazelnut leaves; a stand of Northern giant horsetails.

Middle: a Black hawthorn bud guarded by its wicked thorns; Saskatoon buds opening.

Bottom: a Bigleaf maple flower bursting open; these Black cottonwood leaves have shed their sticky sheaths; a huddle of Wall lettuce.



More Signs of Spring



Top: Salmonberry; Skunk cabbage; Pacific Bleeding heart.

Middle: aging Trilliums; tiny Wood Bittercress.

Bottom: jelly-like Witch's butter fungus; Mica cap mushrooms; Sulfur tuft mushrooms.



Changes to the Trail in a Decade



View from Bridge 4



Plant Species of Concern in Our Area (Third installment):

[Red: at risk, Blue: of concern]

Phantom orchid (*Cephalanthera austini*)

The Phantom orchid is a non-photosynthetic perennial. This means it lacks chlorophyll, taking nourishment from decayed organic material. It grows from a rhizome instead of a root and will reach a height of up to 65 cm. The stems have 5-20 vanilla-scented white flowers, each with a yellow gland on the lower lip. The 2-5 bract-like leaves are present along the stem. The stems turn yellowish or brownish as they age. After flowering, dry, seed-bearing capsules may form.

Indian pipe (*Monotropa uniflora*) is similar looking and occurs in the same types of habitats. The two species can easily be distinguished because phantom orchid has numerous upright flowers on each stem while the Indian pipe bears

only a single drooping, bell-shaped white flower on each stem. Also, Phantom orchid flowers are fragrant, while those of Indian pipe are not.

Streambank Lupine (*Lupinus rivularis*)

This perennial herb is a native coastal lupine species found in disturbed sandy-gravelly sites at lower elevations in southwestern BC. It stands erect and grows to a height up to 60 cm.

Unlike many other species of lupine, its hollow stems lack leaves around the base. The leaves, which alternate up the stem, are divided into 6-9 leaflets which grow on stalks and spread out like fingers from a common point. Their upper surface is hairless while the underside has minute hairs.

Its flowers are a pea-like blue or lavender colour and arranged in clusters along the stem. The seeds are produced in pea-pod like structures which become blackened and hairy as they age.

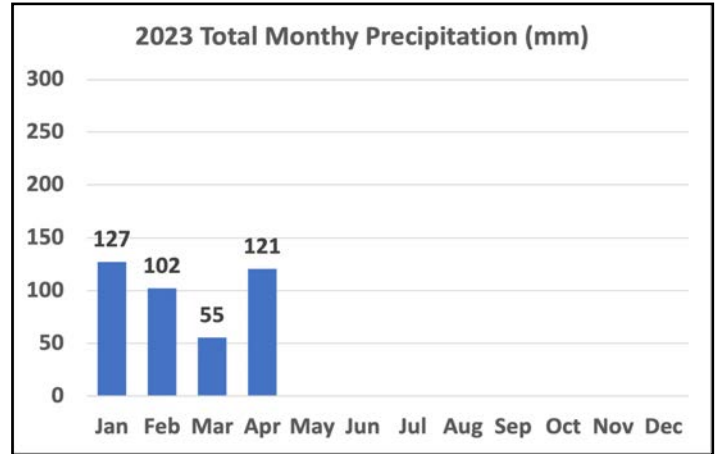
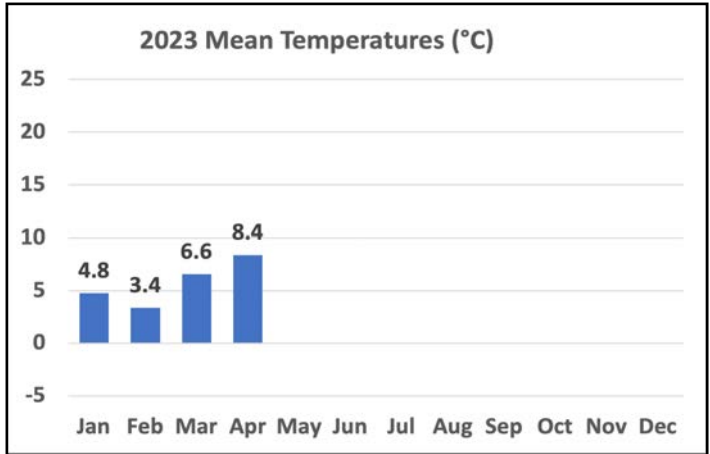
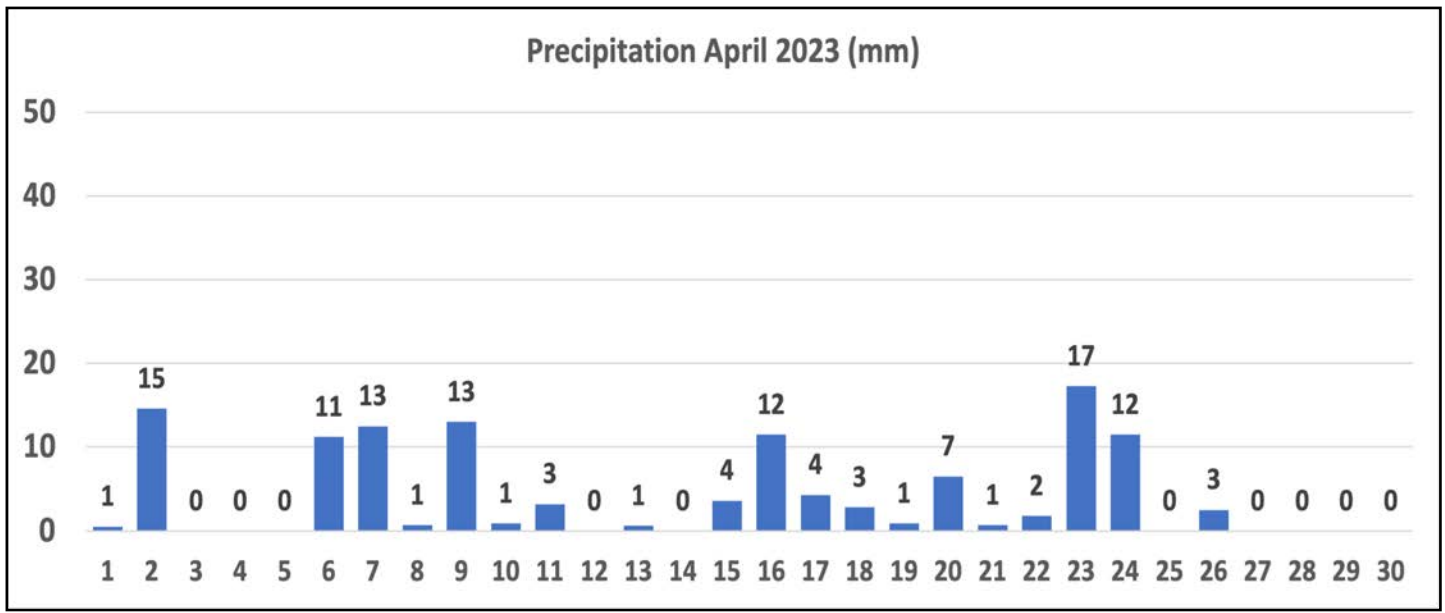
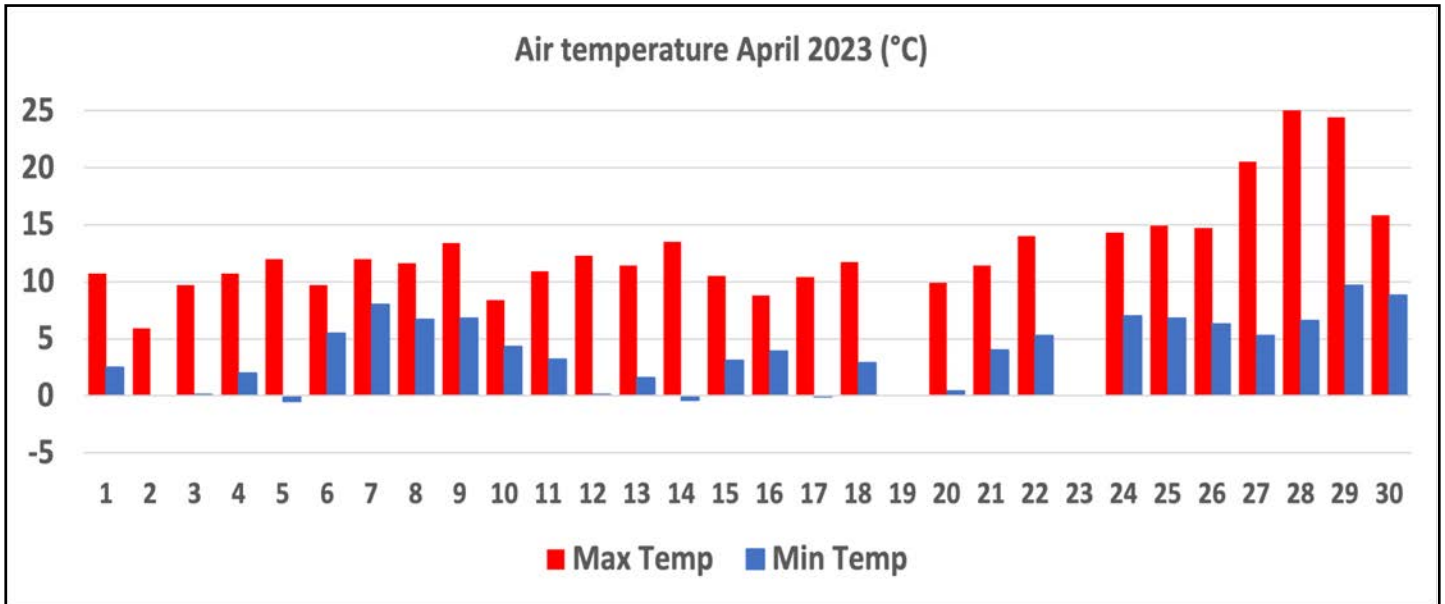


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[April 1st] March was cool and very dry throughout B.C. Abbotsford was one of five BC stations that had record low precipitation for the month. Usually by April 1st, 95% of the seasonal snowpack has accumulated. The Fraser River at Hope snowpack is at 100%, while some Interior stations are above normal. The cool La Niña conditions which we experienced this winter have lead to increased late season snowfalls and a delayed snow melt. Flooding can occur if there is a sudden transition to warm weather.



For convenience, I use these custom place-names:

