



Stoney Creek Trail Report
No. 65 - August 2024

The front page photo features a **Wild lettuce** plant (*Lactuca virosa*). It is one of several plants I've spotted for the first time this past month. Several of these tall plants can be seen standing beside the Hemlock Hill path. Wild lettuce grows from a tap root up to a height of two metres. It looks much like its cousin, Prickly lettuce (*L. serriola*), but is taller and lacks the deeply lobed leaves. Both are native to Europe and have been naturalized in North America.

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L. virosa has been traditionally used for its medicinal properties in treating respiratory ailments, skin conditions and pain. It has been called “opium lettuce” due to the mild sedative and analgesic effects of its milky sap—which is toxic if ingested

in large amounts. The leaves of Wild lettuce are bitter but edible, and have been used in salads or cooked as greens.

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The condition of Stoney Creek and the microscopic aquatic animals that remain in it after the firefighting foam fiasco are of ongoing concern. Results of the tests carried out by experts hired by the City are not available. Fortunately, teams from **Pacific Streamkeepers** and **UFV** came when invited. The results from a water quality test by **Steven Marsh** of UFV are below. The results of two surveys of critters in the Creek begin on the next page.

Steven sampled in two places: in the Glade and just above Bridge 1. Some macroinvertebrates were found at both sites, plenty of stoneflies and some worms and leaches, but it appears that diversity is lacking, and most are small. For the most part **the geochemistry looked okay**. The average **water temperature** was cool (14.7°C), slightly warmer near Bridge 1 than in the Glade. The **dissolved oxygen** level was fine (105.5%). **Conductivity** was fairly high but probably due to recent rainfall which dissolves more material. The **pH level** was okay (7.3). **Turbidity** was near 0. The **Oxidation Reduction Potential** (ORP) provides a measurement of the ability of the stream to cleanse itself by oxidizing contaminants. Values around 500 are best. The ORP was surprisingly low, over 200 at the Glade but only 40 near Bridge 1. Something was affecting the ability of the water to oxidize. Steven concludes: “I think we need a more detailed look at these, both upstream of the spill and within the area affected. ***It is better than I at first expected.***”



Benthic Macroinvertebrate Appraisals:



Free-living caddisfly



Free-living caddisfly



Non-biting midge



Flat-headed mayfly



Flat-headed mayfly



Spiny-crawler mayfly



Giant stonefly



Little yellow stonefly



Little yellow stonefly

The benthic (bottom dwelling) macroinvertebrates (spineless animals) on the previous page **were collected from the Chilliwack River** for a project by **Clay Falk**, a research assistant at UFV. All of these insects are common in the lower Fraser Valley and would normally be seen in Stoney Creek. Thanks to Clay for most of the following information.

Living organisms are classified in a hierarchical system called taxonomy. One of the ranks in the hierarchy is named **order**. In this study of insects, the orders of interest are caddisfly, mayfly and stonefly. Another rank, below order, is **species**. You can see in the photos that there is more than one species of stonefly within the stonefly order. This is also true of the mayfly and caddisfly orders.

Generally, the number of orders present in a stream is important, but it is the **diversity** of macroinvertebrates that is the true indicator of stream health. One method of evaluation diversity uses the **EPT Index**. It gets its name from the three orders of aquatic insects above: [Ephemeroptera \(mayflies\)](#); [Plecoptera \(stoneflies\)](#); and [Trichoptera \(caddisflies\)](#). This is because they are particularly sensitive to pollution, as well as being common in the benthic macroinvertebrate community.

The EPT Index measures the abundance of different species from these orders. For example, if you find 5 species of mayflies, 5 species of stoneflies, and 2 species of caddisflies at a site, the EPT Index would be 12. This number is then compared to an EPT rating table to indicate water quality. Generally, a higher EPT Index means better water quality, as more species of these insects can be found in cleaner water. There are various EPT indices for different regions, but they are reasonably close to each other. The one on the right was used in a water quality project at UFV.



This is another species of stonefly, a Rolled-wing, found in Stoney Creek on July 31st.

On July 31, the UFV team netted six samples from Stoney Creek in three locations: two in the Glade and one slightly upstream from the Pond.

Using the “modified CABIN kicknet test method” they saw around 150 Flat-head Mayflies but only a handful of Rolled-winged Stoneflies. This yields an EPT index rating of 2.

Thus, in this study, **Stoney Creek water quality was poor.**

EPT Index

Excellent.....	>27 EPT
Good.....	21-27 EPT
Good-fair	14-20 EPT
Fair.....	7-13 EPT
Poor.....	<7 EPT

It is important to emphasize that environmental factors including water temperature, predation, adult emerging time, etc. can also affect EPT populations. Thus, the very small number of tests taken on only one day of the year by no means yield a reasonable statistical analysis of Stoney Creek’s water quality. However, it should not be ignored, as it is relevant data that initially points to a very damaged ecosystem.

On July 29th (two days earlier than the UFV team), a member of [Pacific Streamkeepers](#), **ZoAnn Morten**, carried out a survey of macroinvertebrates in the Creek. It was done near the fence at the top end of the Glade using a 30 cm-wide D-net.

Streamkeepers keeps track of a number of different factors on a detailed [report form](#). The following is my interpretation of their results.

There are 3 categories of specimens:

1. Pollution Intolerant (which includes the EPT species),
2. Somewhat Pollution Tolerant, and
3. Pollution Tolerant.

EPT Index	
Good	> 8 EPT
Acceptable ...	5 - 8 EPT
Marginal	2 - 5 EPT
Poor	0 - 2 EPT

In Category 1, a total of 10 Mayflies of 4 different species, 1 Stonefly and no Caddisflies were captured. This is a total of 11 insects of 5 species. The Streamkeepers index (above), gives an **EPT Water Quality rating** of 5 - **marginal**.

As well as a Water Quality evaluation, there is a **Diversity Assessment**:

In Category 2, no species were found.

In Category 3, 1 Aquatic worm, 3 Midge larvae of 2 species, and 3 Water mites of 1 species were captured. This is a total of 7 insects of 4 species.

Predominant Species Ratio	
Good	0.0 - 0.4
Acceptable	0.4 - 0.6
Marginal	0.6 - 0.8
Poor	0.8 - 1.0

In all, 18 insects of 9 different species were captured. This is a ratio of .5 which gives a **Predominant Species Ratio** rating of **acceptable**.

The Streamkeepers protocols also provide an overall **Site Assessment Rating**. This was determined to be 2.25, which means ***the Creek rating is marginal***.

Site Assessment Rating	
Good	4
Acceptable	3
Marginal	2
Poor	1



(Left) a Water snipe fly larva from the Chillwack River. It is in Category 2.

(Right) an Aquatic worm from Stoney Creek. It is in Category 3.

Trail Dogs



“**Louis** (Louie), my King Charles Cavalier, was born on January 6, 2024 and has been with me for several months now. He has a friendly disposition, always eager to say hello to people and dogs alike.

“While he loves chasing crows on the field, he hasn’t quite figured out rabbits yet and only gives them a curious sniff. It’s important to keep him out of the garden, as he has a habit of chewing off flower heads.

“Despite this, I love his gentle nature and the meekness he shows when greeting others.”

“**Jack** is a 3-year-old Golden Retriever, who hails from the Retriever Buddies Kennel in Calgary. This purebred Retriever is a bundle of energy, with a love for swimming, hiking, camping, and the occasional wrestling match. His favourite playmates, Delores and Jersey, can often be found tussling with him at Stoney Creek Trail.

“Jack is a typical Retriever in many ways, adoring food, quality time with his human family, belly rubs, and of course, leaving a trail of shedded fur in his wake. Interestingly, despite his breed’s reputation, he hasn’t displayed a need for retrieving items, but he definitely enjoys the thrill of chasing squirrels.”



Dog Corral Amenities

The Dog Corral is a popular facility in Stoney Creek Park. It is enclosed by a split rail fence enhanced with wire mesh to ensure small dogs cannot escape. It can be accessed in two places through gated entries with leashing vestibules.



The popular wood tables are fitted with support brackets and umbrellas donated by **Kelly Perrin**. A less-used green metal table was recently replaced by a more comfortable wooden one.

Parks & Recreation also provided a garden shed for storage of the umbrellas as well as shovels, rakes and pails for maintaining the area. For trial purposes, the City installed solar powered lighting near the shed so people can walk their dogs during twilight hours, particularly during the shorter days of winter.



There have been some interesting proposals: solar lamp post LED lighting (which would require a bylaw amendment and approval from neighbours); installation of steel posts supporting triangular sails for protection from sun and rain. There is also a wish list: pave the corral entryways for wheelchair access; build another enclosure for small dogs so they can run safely off leash.



Knotweed Knots

Prostrate knotweed (*polygonum aviculare*), also known as pigweed and lowgrass, is in the buckwheat family and distantly related to the notorious Japanese knotweed (*Fallopia japonica*).

Prostrate knotweed is an annual herb that grows from a taproot, forming stems that can lie low and flat almost like a mat. It is considered an invasive species in parts of British Columbia because it can outcompete native plants and establish itself in a variety of habitats: dry disturbed sites, roadsides and waste places, as well as (watch out!) gardens and lawns.



It is very tolerant of compacted and poor soils, which is why it often thrives in areas like the Dog Corral where other plants struggle to grow.



Prostrate knotweed plays a significant role in nature. It is a prolific seed producer, providing food for birds. Its small, inconspicuous flowers are rich in nectar, making it an important plant for pollinators like bees and butterflies.



The Decimation of Our Hazelnut Trees



Almost all of the Trail's older Hazelnut trees are dying or dead because of a fungal disease, Eastern Filbert Blight. It forms cankers on the branches leading to a slow death. [[More](#)]

These photos are arranged in order, going southward from Bridge 3. The last photo is an optimistically planted tree at the very top (south) end of the Trail.



Odds and Ends



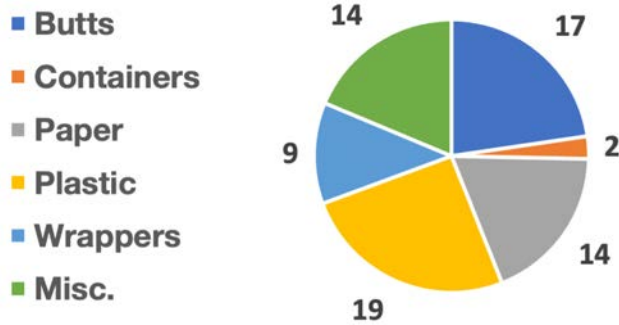
Top: Horseweed, Marsh cudweed, and a Canada goldenrod in bloom.

Middle: the annual Pond dredging was earlier than usual. About 15 truckloads of gravel were removed.

Bottom: a poor place to stub a cigarette!; powdery white mildew on maples is more unsightly than dangerous; Black chokeberries will make your face pucker, but the birds like them.



Litter Tally August 2024



Total litter items = 75

Containers: bottles, bottle tops, cans, coffee cups, lids, juice boxes.

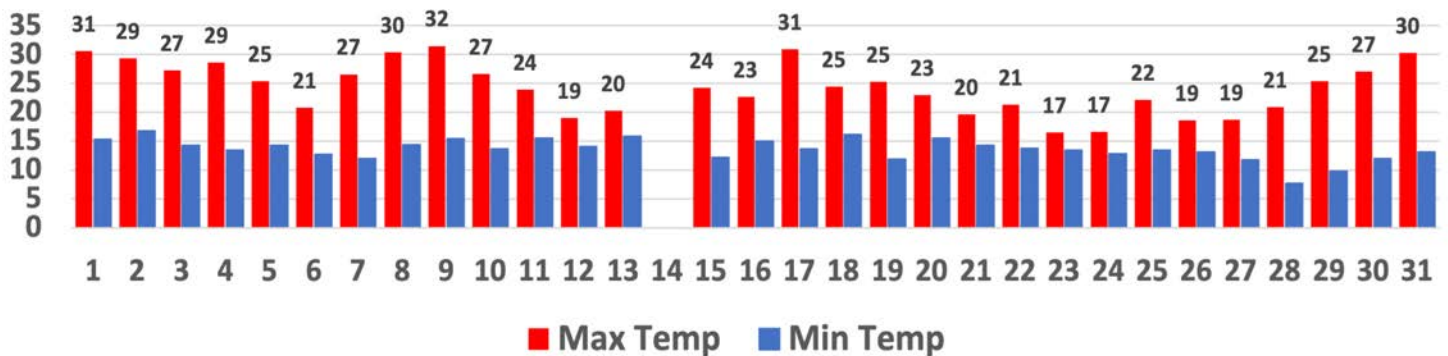
Paper: tissues, napkins, posters, newspaper, receipts, cardboard, etc.

Plastic: dog waste bags & shreds, other items made of plastic.

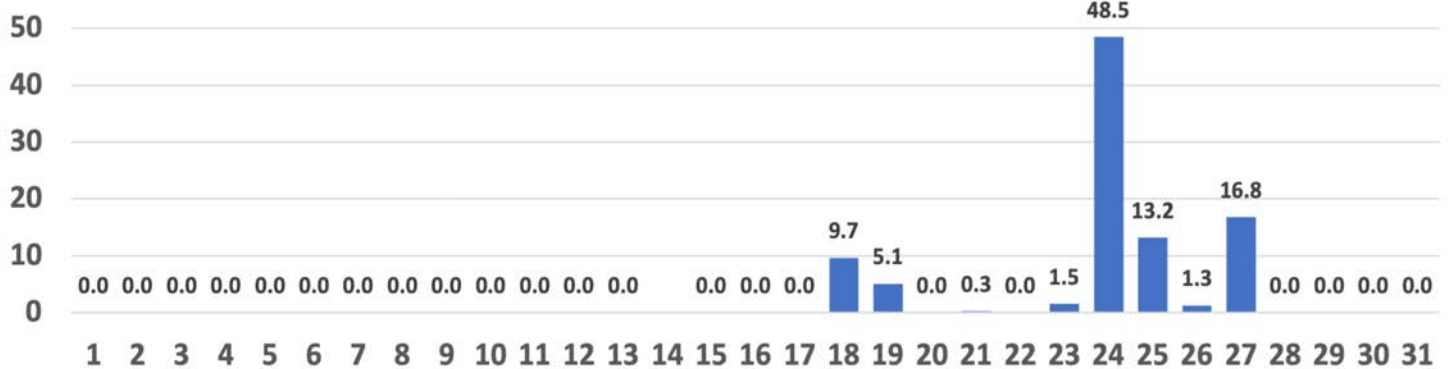
Wrappers: candy wrappers, foil, cellophane.

Miscellaneous: clothing, glass, chewing gum, dog balls & fragments, etc.

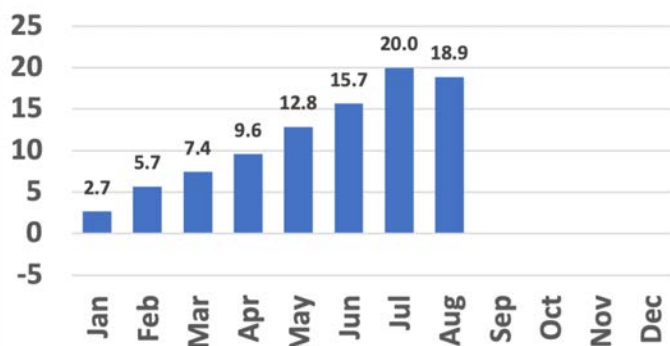
Air temperature at YXX August 2024 (°C)



Local Precipitation August 2024 (mm)

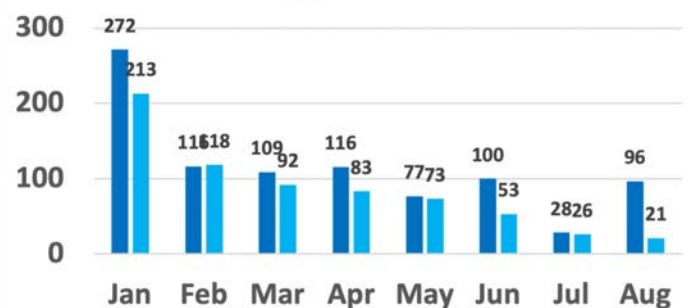


2024 Mean Temperatures (°C)



Precipitation in 2024 (mm)

Average: 2019-2023



For convenience, I use these custom place-names

