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The cover photo of a dead female coho by **Alexandra Munday** introduces the main feature in this Trail Report, a rather unsettling look at this year's salmon run.

First, I'd like to express appreciation for the efforts of our ARPSES (Abbotsford Ravine Park Salmon Enhancement Society) streamkeepers, those below, and **Dale, Rob, Bruce, John and Tom**, who have done great work in our urban creeks while often putting up with very unpleasant conditions.

The number of coho spawners this season has been phenomenal, far above normal (see Page 11). However, their success in spawning has been significantly affected by a serious parasite outbreak and possibly other factors.

The government authorities responsible for ensuring the survival of spawning salmon were given reports and ample evidence of our coho problems. In return, they have suggested possible causes but not yet provided scientific test results or conclusions. The comments on the salmon in this report are mainly based on information received over two weeks ago.

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The weather statistics on Page 10 show that this has been a very wet month. By mid-month the total rainfall had surpassed the

Alexandra, Doug, Dennis and Ellery

average of the past six Decembers. Of course, conditions have not been favourable for mobility scootering, litter picking or taking photos.

Please have a look at the poster on Page 13.

Stoney Creek Park is effectively a part of Bateman Park, a green space and trail system initially developed in the early 1990's when the Kenny family, local landowners, donated eight acres to the City of Abbotsford in exchange for approval of a 129-lot subdivision called "Creekstone on the Park," located in north-central Abbotsford.



Stoney Creek is safeguarded by a number of regulations which are aimed at maintaining fish habitat, keeping the water clean, and preserving the integrity of the ravine slopes.

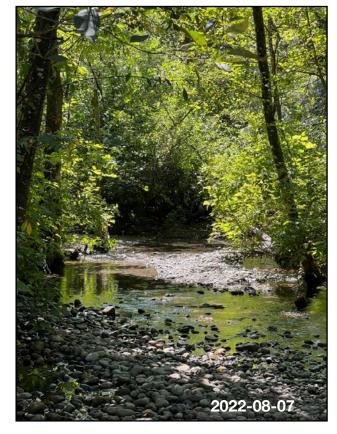
As it is a fish-bearing stream, development near its banks must comply with the Riparian Areas Protection Regulation (RAPR), which ensures that a Qualified Environmental Professional (QEP) has identified proper setbacks before any work can begin.

The City of Abbotsford offers further protection through its Streamside Protection and Enhancement Area (SPEA) rules, which require a buffer zone of up to 30 metres to protect vegetation on both sides the creek. If a "variance" is allowed, the developer must contribute funding toward habitat improvements.

Because many properties are close to the ravine, the Steep Slope Development Permit system prevents erosion or landslides that could send soil into the creek. Additionally, a legally binding covenant ensures that future owners will also respect the setback from the edge of the ravine.

Stoney Creek is designated a Natural Environment Development Permit Area to ensure erosion control, on-site monitoring, and an immediate shutdown of construction if habitat is threatened.

Further safeguards for birds, riparian vegetation, and stormwater are added by local bylaws and provincial and federal wildlife legislation. [Here is a more complete list of the regulations].



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Together, the regulations mentioned on the previous page are meant to maintain the ecological health of Stoney Creek as the neighbourhood around it develops.

It is unfortunate these measures can do nothing to control the rampant growth of invasive flora such as blackberries and Himalayan balsam. Likewise, despite





strict regulations enforced by the DFO (Fisheries and Oceans Canada), the salmon in our creek remain vulnerable and experienced serious challenges this fall.

Until November 1st, the creek water level had been very low, apparently too low for the chum salmon which normally arrive to spawn in early October. The chum run this fall was very small: only 19 fish had been counted by the first week of December.



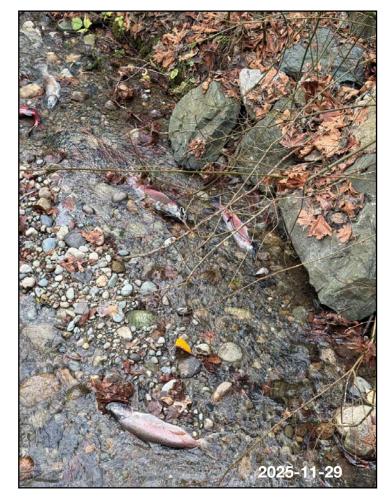
Upstream from Bridge 4

When a substantial rainfall finally came on November 1st, the coho began to arrive. By the end of the month, around 400 spawners, male and female, had been counted by the ARPSES streamkeepers. They, as well as everyone who walked the trail, had noticed unusually large numbers of dead salmon.

Of course, salmon normally die after spawning, but this was different. The volunteers found something very disturbing: the majority of dead females still held their eggs—they had not spawned. The numbers were shocking: roughly two-thirds of the dead females counted were pre-spawn.

[Please be aware that cutting the fish is the streamkeepers' way of marking them so they won't be counted again in a subsequent survey.]

Paul, our local DFO representative, was informed of the situation on November 30th. He then notified the City and reached out to federal fisheries officers. The next day he recommended that we, as individuals, submit email reports to the DFO and call the BC emergency (RAPP) line as well. Several people did so and received prompt acknowledgment.



Below Bridge 6



Upstream from the Nursery Tree

Our very responsive DFO rep also investigated upstream and around the neighbourhood for possible sources of creek water contamination, then provided all observations to the ECCC (Environment and Climate Change Canada) and several other authorities.

Much to our disappointment, Paul told us the DFO no longer does water-quality sampling. Instead, it's now the responsibility of the ECCC and they will withhold test results during active investigations.



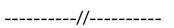
In a November 29th spawner survey, a possible cause had raised its ugly head. Streamkeepers Doug, Alexandra and Ellery noticed tiny black leeches (*Piscicola salmositica*) attached to the gills of both male and female coho.

We were told by authorities that small numbers of leeches are fairly common in salmon populations, however this year's infestation was unusually severe—and was observed only in Stoney Creek.

They said these leeches don't normally cause fatalities, but can act as hosts for a microscopic protozoan parasite (*Cryptobia salmositica*), which is known to damage red blood cells, causing anemia. (Doug mentioned seeing coho with unusually pale flesh; Alexandra saw lethargic and gasping fish).

After consulting with fish health specialists, Paul offered the opinion that a number of factors such as water quality and the presence of leeches and other parasites could all be involved in causing the prespawn deaths. Ultimately, there is no effective treatment for these parasites in the natural environment. There was nothing that could have been done to help.

On the positive side, Paul has recently provided ARPSES with a water testing device, so readings from Stoney Creek will be readily available. As well, ZoAnn from the Pacific Streamkeepers Federation will be arranging a test specifically for 6PPD-quinone, the nasty chemical shed by vehicle tires which is so lethal to coho.





The Loss of a Bigleaf Maple



This tree has appeared in several photos in Trail Reports over the years. It was attractive because of the lush growth of feathered neckera moss and licorice ferns that thrived on it during wet seasons.

The small roots of this old-timer were undercut by high water during heavy rain around the 10th of this month. In falling, it brought down a nearby alder. Imagine the thump it made!









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Odds & Ends 1/2







Natural recycling by fungi:

- **1.** A colony of shelf fungus (*Polyporales*) digesting an old stump beside the Bridge 5 bench.
- **2.** Tiny, colourful jelly spot fungus (*Dacrymyces stillatus*) on a fence rail at the parking lot entrance.
- **3.** Snow-white crust fungus (*Plicatura nivea*) at work recycling a fallen alder below the Forks.

Small things are revealed when ground cover dies back in winter:

- 4. Snow berries now show up clearly on Hemlock Hill.
- **5.** Seven of the dozen giant sequoia seedlings planted on the Hill have survived two years now.
- **6. 7.** These pine saplings on the Hill are also doing well.









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Odds & Ends 2/2





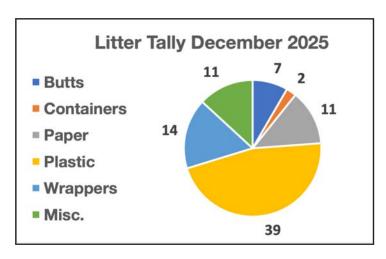


- **1.** As a precaution, a dead standing alder was removed by the City.
- **2.** After a heavy rain the creek flowed beside the trail on the Straightaway.
- **3.** The Coachstone entrance always gets it.
- **4.** Another species of fish was seen along the trail.
- **5.** On the Pond, this goldeneye duck is hoping to find a treat—maybe salmon eggs?





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Total litter items = 84

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

Paper: tissues, napkins, posters, newspaper,

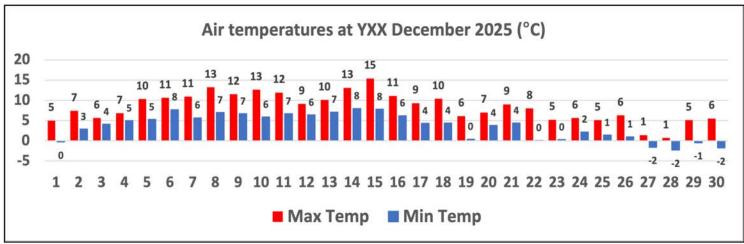
receipts, cardboard, etc.

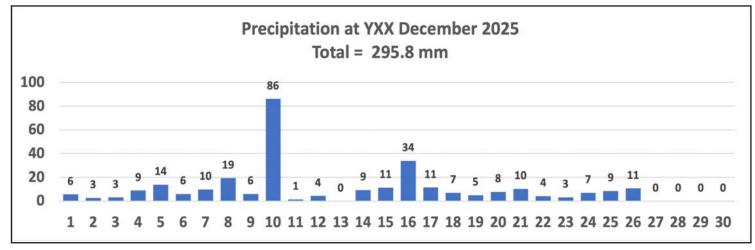
Plastic: dog waste bags & shreds, baggies, other

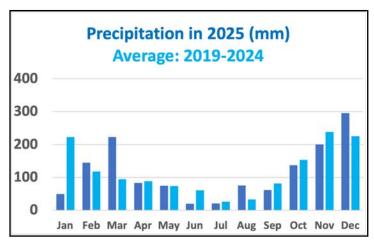
items made of plastic.

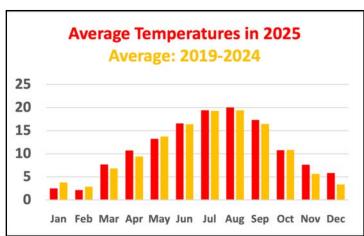
Wrappers: candy wrappers, foil, cellophane. **Miscellaneous:** clothing, glass, chewing gum,

dog balls & fragments, etc.

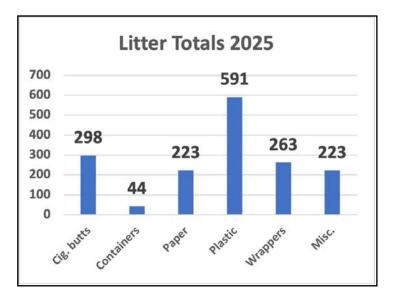


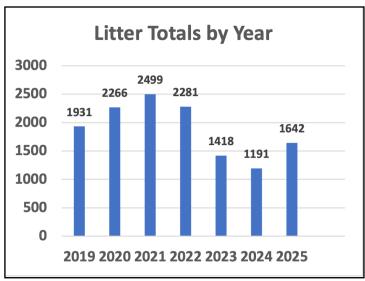


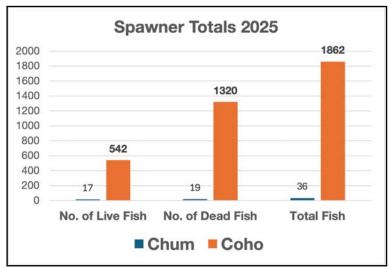




Year End Statistics

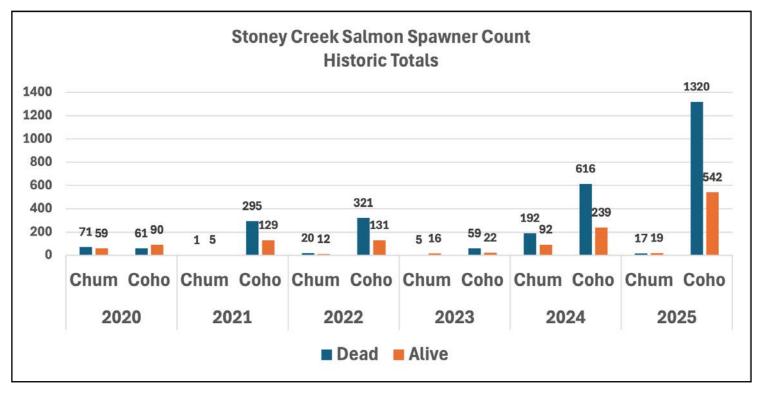




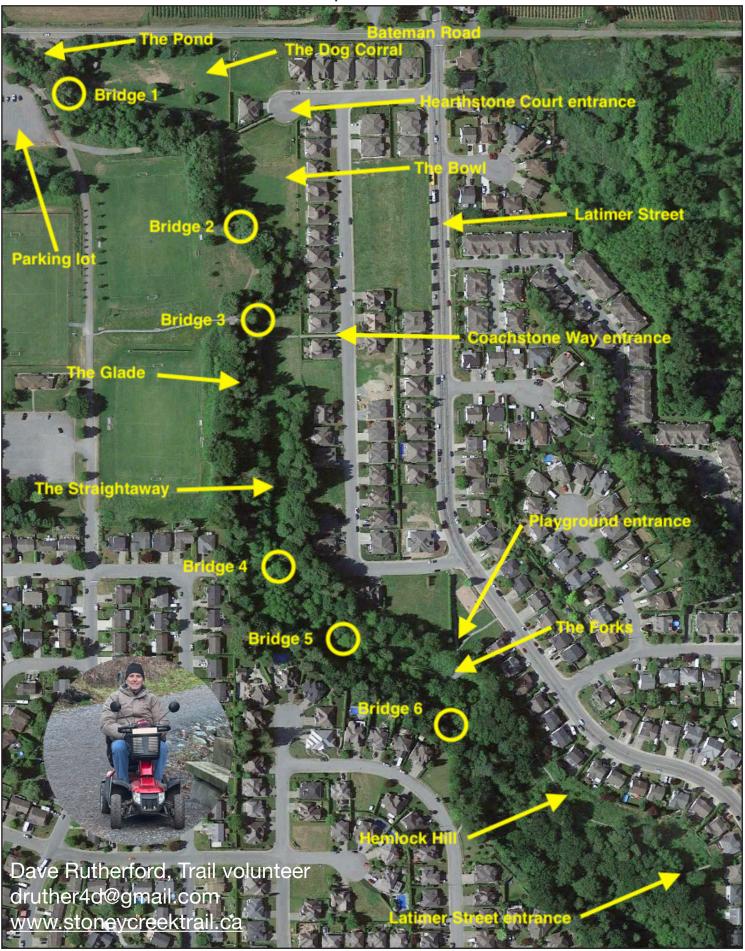


The chart on the left is meant to show the very low number of Chum and the remarkable high number of Coho counted this spawning season.

In the chart below, you can see the Coho numbers are historically very high. What it does not show is that over 60% of the females were pre-spawn deaths (369 out of the 595 counted). This could result in a low coho return in 2028.

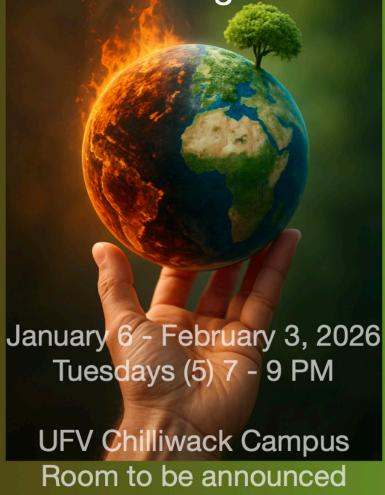


For reference, I use these custom place-names:



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From Knowledge to Action



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