

Healthy Waters in the Tod Creek watershed (2023-25): *a preliminary report*

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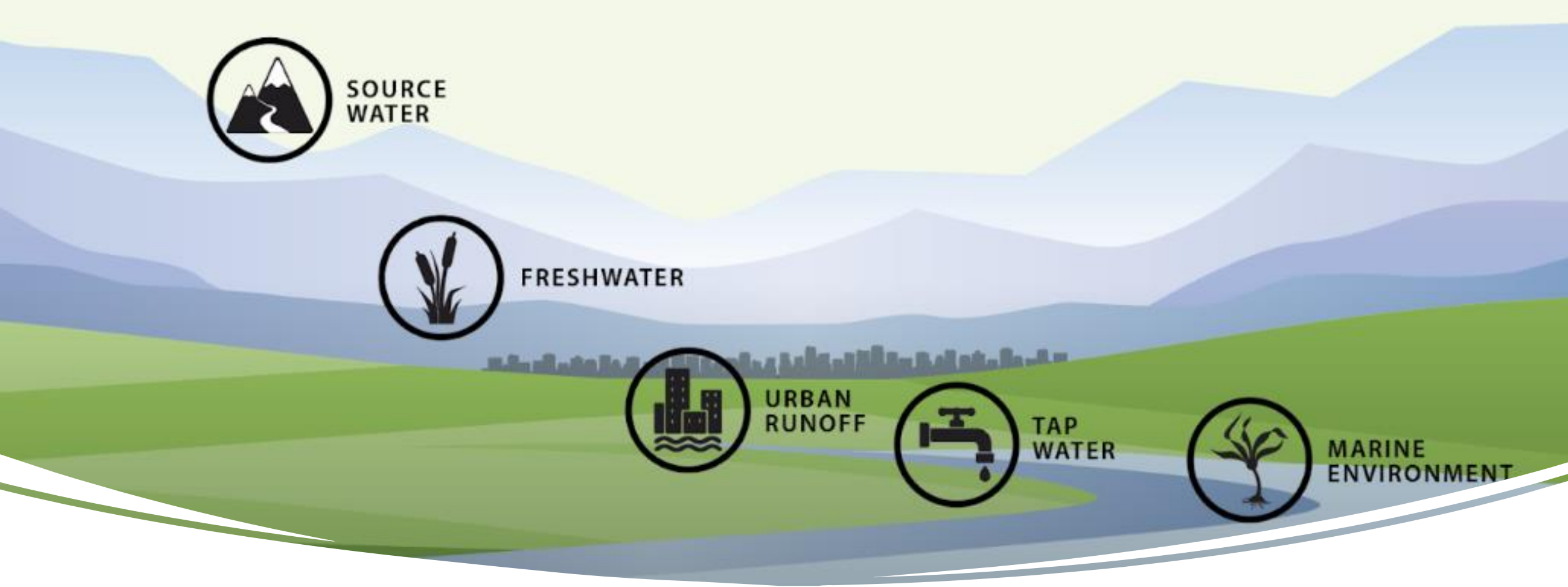


RAINCOAST
CONSERVATION FOUNDATION



Healthy Waters Program

Healthy waters for salmon, whales, and people.



The simplified Raincoast Healthy Waters sampling formula to track pollutants in watershed

A 'Healthy Waters' initiative at Tod Creek (2023-25)

- CRD is supporting a partnership that includes Tsartlip First Nation and the W̱SÁNEĆ Leadership Council;
- Training and capacity building are central to this project;
- Concerns about Hartland landfill influences exist;
- This project will provide an indication of *any activities* in the watershed that degrade water quality in Tod Creek.





The Tod Creek watershed

- One of several 'Healthy Waters' projects;
- From Maltby Lake to Tod Inlet;
- The smallest watershed 24 km²;
- Two sampling visits to date (Dec 13, 2023 & August 9, 2024);
- Hartland landfill drainage served as an extra sample.

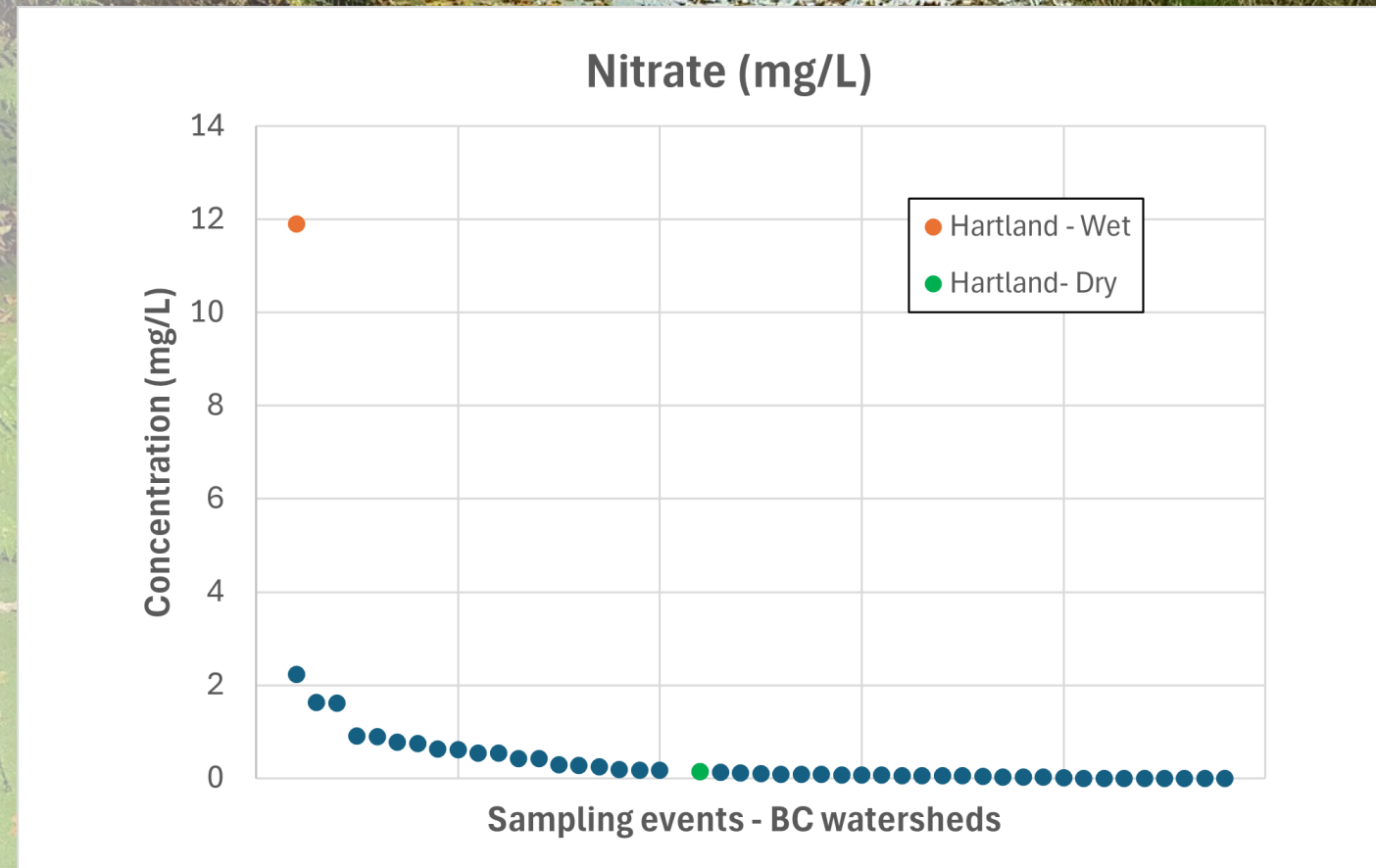


Early findings from Wet season: nutrients

Excess amounts of Nitrate, Nitrite, Ammonia and/or Phosphate from agriculture and wastewater can reduce dissolved oxygen and cause fish kills.

Levels of nitrate and biological oxygen demand (BOD) were high in Hartland samples during wet season.

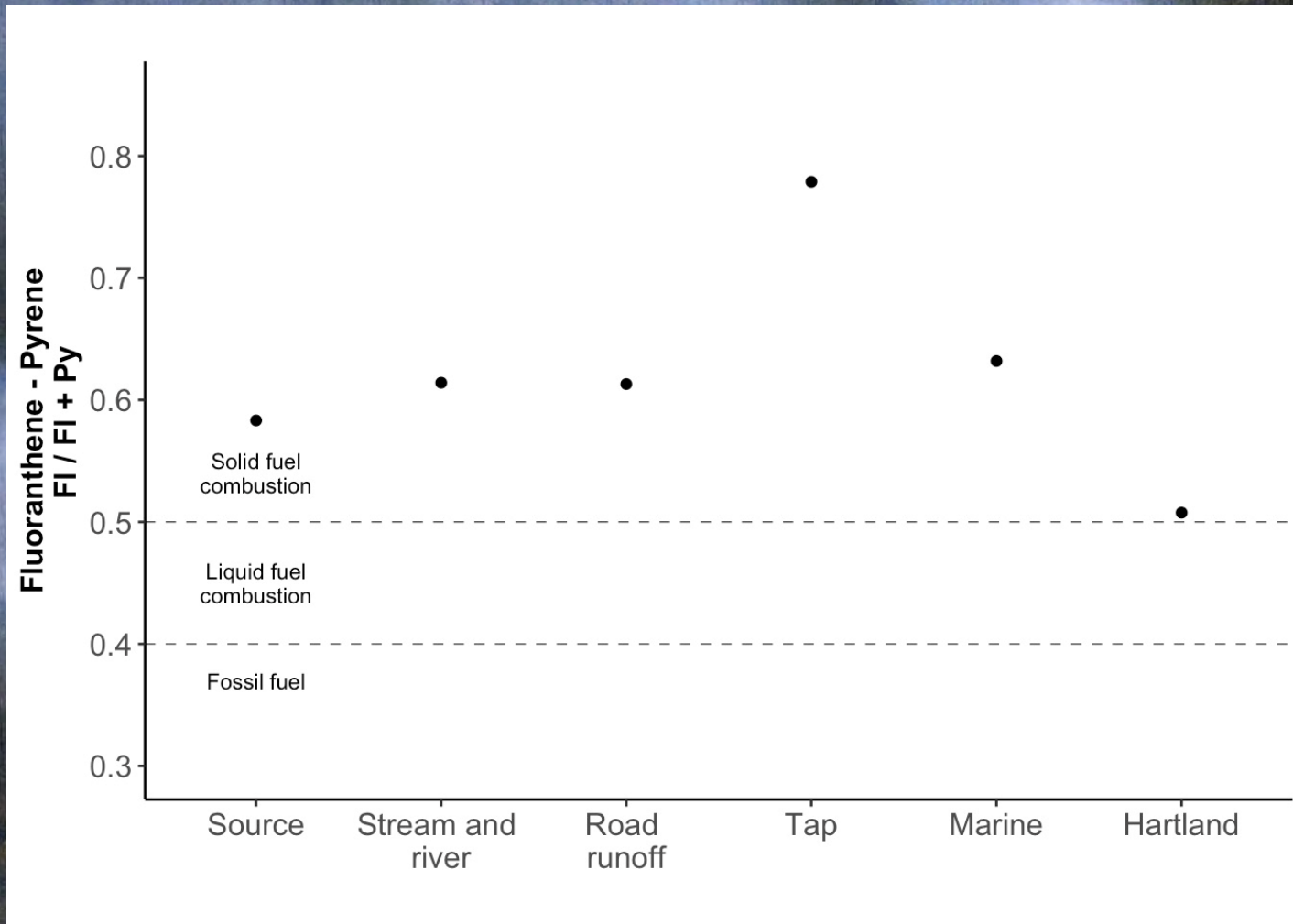
Early dry season results suggest much lower levels.



Early findings from Wet season: Hydrocarbons

A complex group of thousands of compounds found in coal, petroleum and plant materials, and as by-products of combustion process; Many are toxic and carcinogenic.

PAHs likely due to wood combustion as a source (forest fire smoke?)



Early findings from Wet season: PFAS ('forever chemicals')

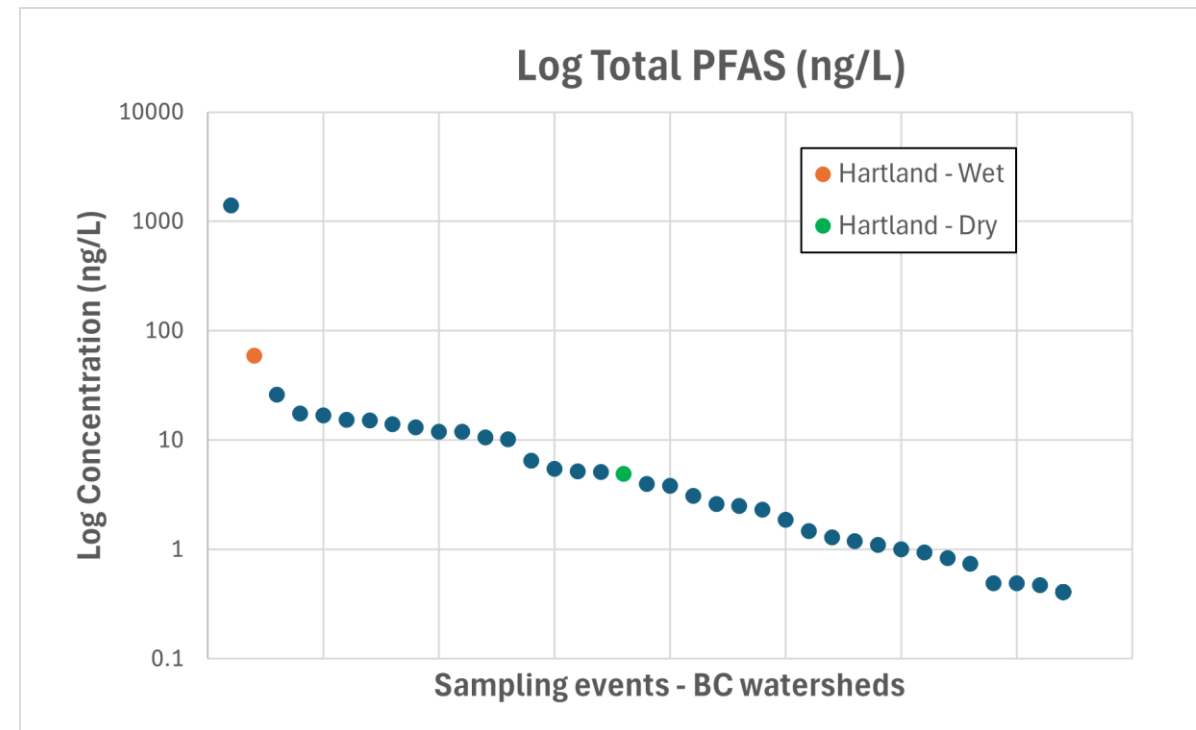
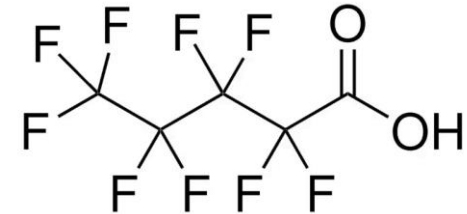
A wide range of products and formulations used in consumer products and firefighting foams; endocrine disrupting in fish and mammals.

Levels of PFAS (per- and polyfluoroalkyl substances) were high in Hartland drainage samples in wet season but lower in dry season.

Top PFAS was PFPeA (Perfluoropentanoic acid), from grease-proof coatings on food packaging and household products, or a breakdown product of larger PFAS compounds.

~15,000 substances; PFOS, PFOA and long-chained PFAS banned in Canada since 2008/2016.

No exceedances of current EQGs – but few are available.

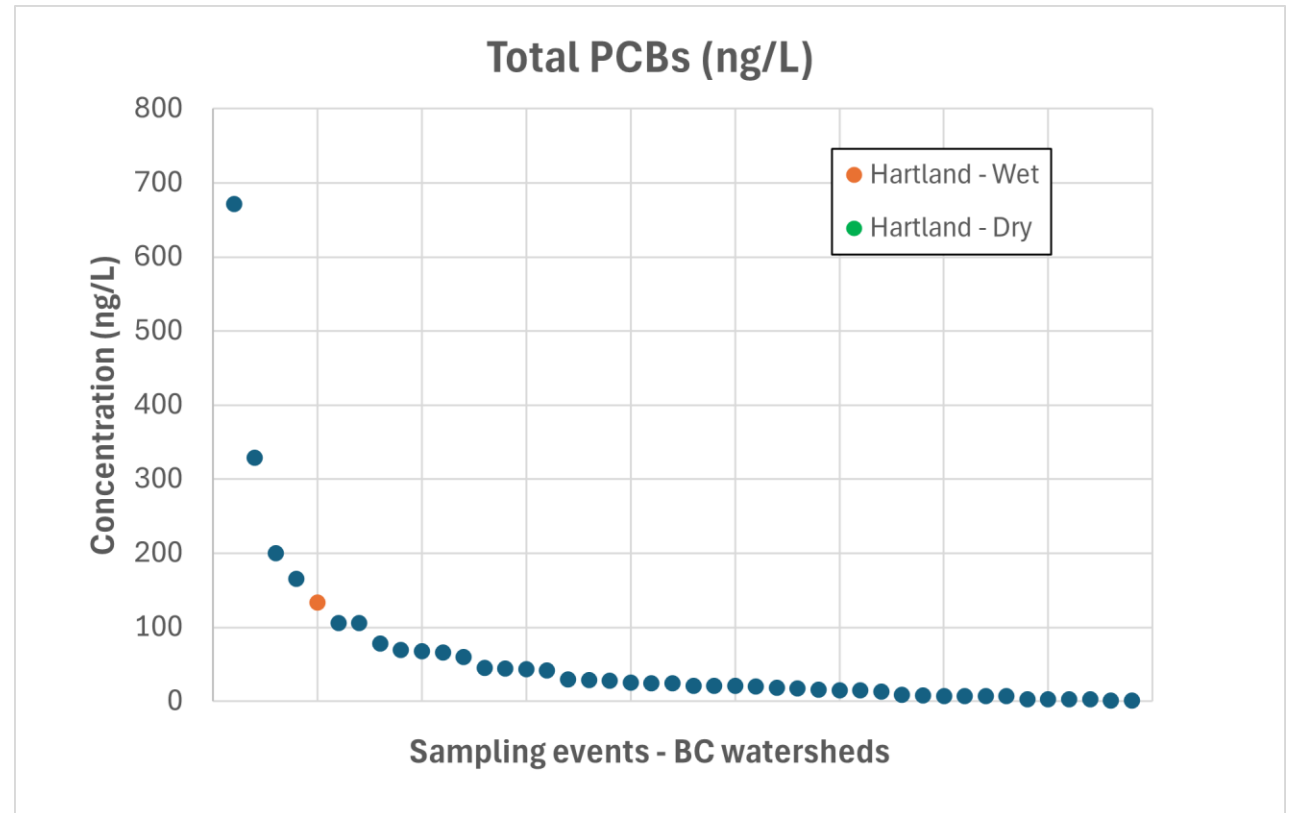




Early findings from Wet season: PCBs

Heat resistant compounds used widely in electrical equipment 1929-1977.

High levels in wet season, but low in dry season.





Early messages

- Some contaminants to watch: nutrients, PCBs, PAHs and PFAS;
- Some good news: BPs, APEs, pesticides and pharmaceuticals;
- Differences exist between wet and dry seasons – more data coming;
- Agriculture, septic, riparian zone, roads, air pollution and Hartland influencing Tod Creek;
- The Raincoast-CRD-Tsartlip-WSANEC Leadership Council team continue to build understanding and capacity.



This preliminary report will be built upon with more analysis

- Water samples in dry (August) and wet (November) seasons in 2024, and dry again in 2025;
- Sediments from Tod Creek forthcoming;
- Sampling and analysis of biosolids;
- ‘Seasonal reports’ for each sampling event, and a summary report at the end of the study.

Lessons to be learned: Tod Creek data will be compared across many BC watersheds



Thank you to the Capital Regional District
(Victoria), Tsartlip First Nation, WSA NEC
Leadership Council, and the Friends of Tod
Creek for support and assistance with this
project



OMRR Technical Working Group 2024 report

“Key Message 4 –Identifying and Managing CECs Requires a Strategy:

- To improve our understanding, the 2022 TWG strongly recommended putting more confidence in field-based studies”
- Discussed “CECs, including per- and polyfluoroalkyl substances (PFAS) and microplastics”