

Cowichan River Water Quality Update – August 23, 2024

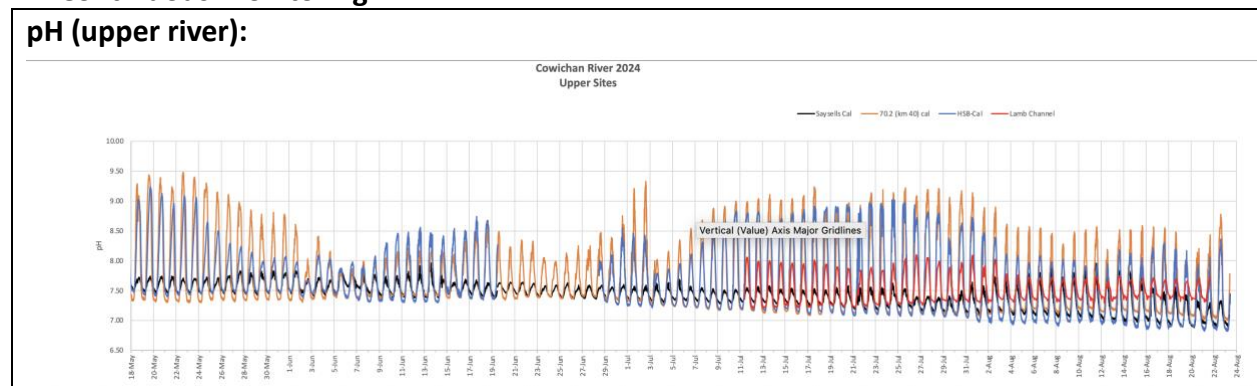
The following information summarizes water quality results for the upper and lower sections of the Cowichan River beginning May 2024. A rigorous monitoring program was put in place as part of a multi-partner plan to avoid another fish mortality event as observed in the summer of 2023. Partners include Cowichan Tribes, BC Fisheries, DFO, CVRD, Town of Lake Cowichan, Municipality of North Cowichan, and the Cowichan Watershed Board. Water quality results are used by the partners to make decisions on required responses to protect fish health and their habitat.

Continuous monitoring equipment has been installed at various locations in each of the upper and lower sections of the river to assess daily fluctuations in water temperature, pH, and dissolved oxygen. Grab samples are collected every 2 weeks at several sites along the river to assess various parameters including nutrient levels and E. coli.

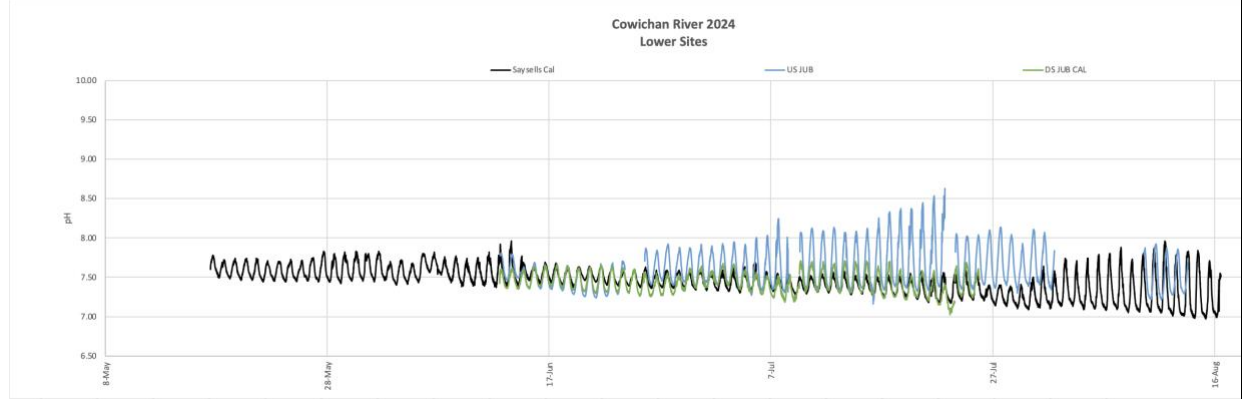
1. Highlights for the week

- Water quality (pH, temperature and dissolved oxygen) is showing **significant improvement** with respect to fish health and survival
- Flows remain at 7 cms, significantly higher than the 4.5 cms in 2023
- In the upper river, diurnal swings in pH have stabilized reaching daytime highs between 8.25 and 8.5, while night time lows decline to around 7 or lower (preferred conditions are diurnal ranges of 7.25 to 7.5); results for the lower river are incomplete due to equipment tampering however indicate stable ranges in pH with daytime highs below 8
- Dissolved oxygen levels have improved significantly in the upper river (diurnal fluctuations have decreased to between 8.75 and 10ppm), and are approaching normal levels; data on DO levels in the lower river are incomplete due to equipment tampering however indicate a narrow (and preferred) range in diurnal fluctuations
- Upper river water temperatures have declined with the cooler weather, with diurnal fluctuations between 20° and 22° C reducing stress for fish; lower river water temperature results are incomplete due to equipment tampering however indicate temperatures are trending down to safer levels for fish
- No fish mortality has been reported

2. Continuous Monitoring:

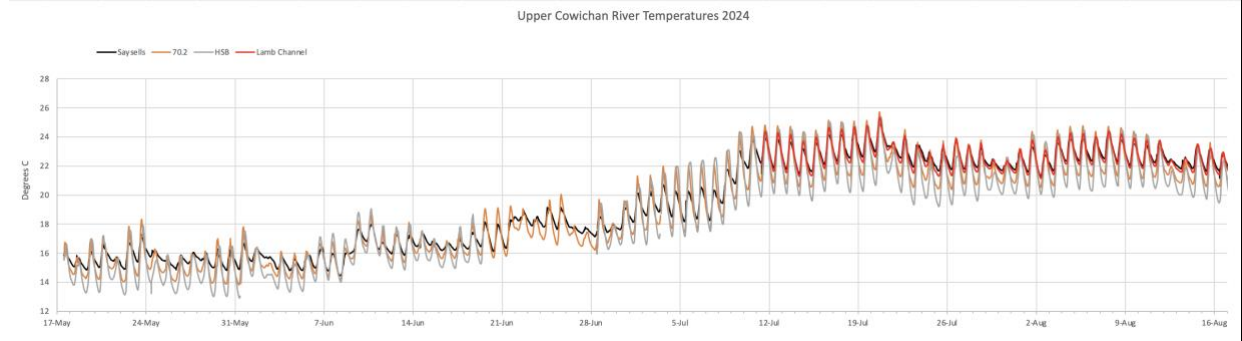


pH (lower river): Results are incomplete due to equipment tampering.

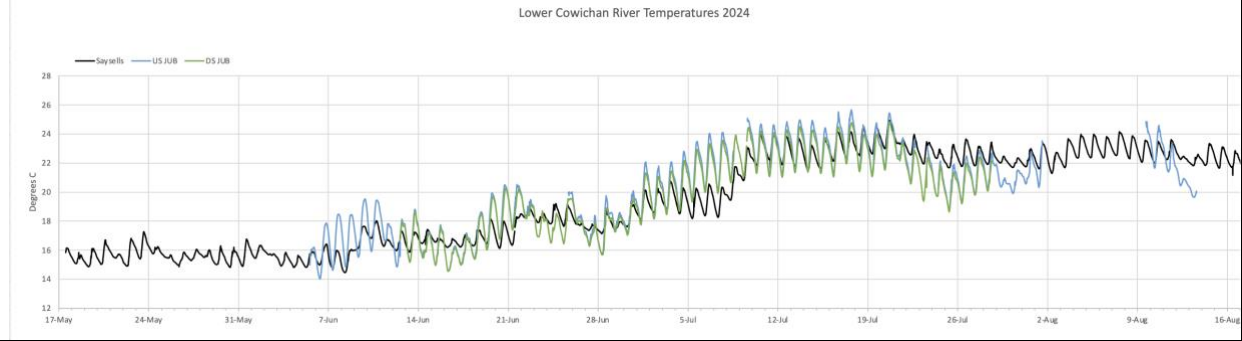


Note: JUB-Joint Utility Board sewage outfall. U/S-upstream. D/S-downstream. HSB-Horseshoe Bend. 70.2-70.2 Mile Trestle. Lamb – Lamb Creek side channel
 Diurnal pH fluctuations result from algal respiration. The Saysell Site is located in the upper river above the Town of Lake Cowichan sewage outfall and represents preferred range in pH diurnal fluctuations. Wide diurnal fluctuations indicate excessive algal growth which is harmful and can be lethal to fish populations.

Temperature (upper river):

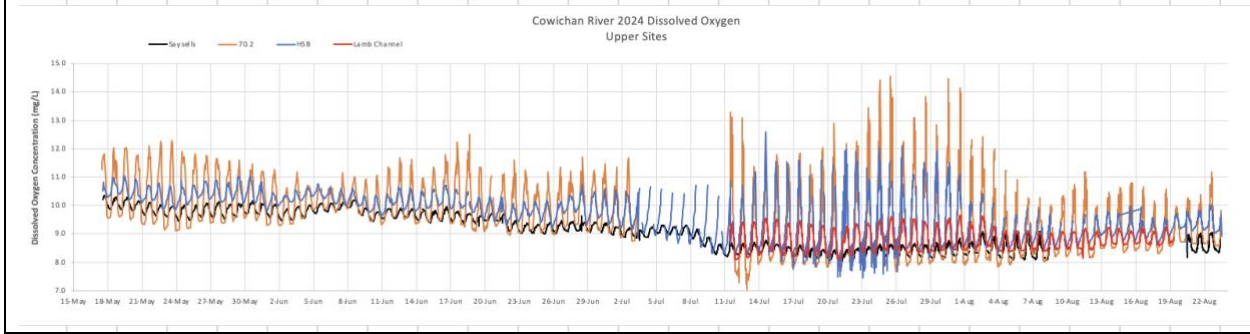


Temperature (lower river): Results are incomplete due to equipment tampering

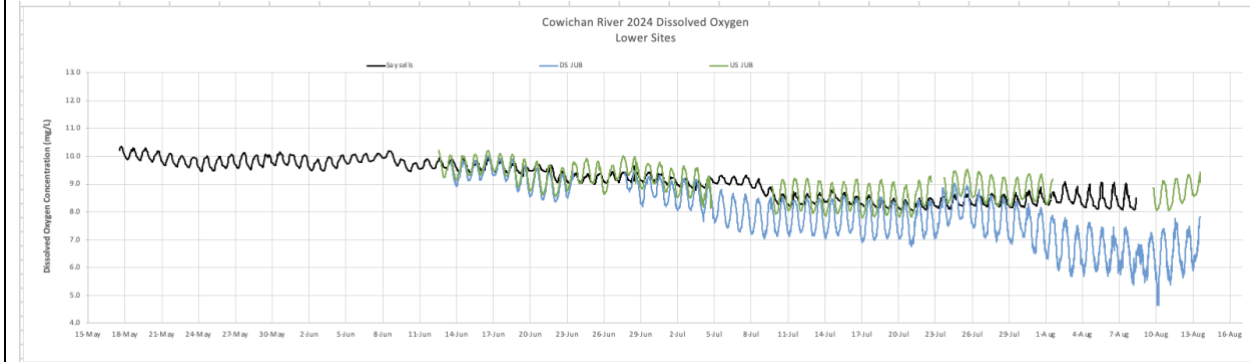


Note: Water temperatures above 16° C are stressful to salmon and trout. Temperatures above 20° C are extremely stressful and temperatures approaching 24° C can be lethal. Note: Data from Saysell's site from upper river added for comparison.

Dissolved Oxygen (upper river):



Dissolved oxygen (lower river): Results are incomplete due to equipment tampering.



Note: Diurnal DO fluctuations result from algal respiration. The Saysell Site is located in the upper river above the sewage outfall and represents preferred range in DO diurnal fluctuations. Wide diurnal fluctuations indicate excessive algal growth which can be stressful and in extreme cases lethal to fish populations.

3. Fish Health:

- No reported observations of fish mortality in upper or lower river sections.

Note: Observations of dead fish are to be reported to:

- RAPP: 1-877-952-RAPP (7277)
- DFO: 1-800-465-4336
- CWB: admin@cowichanwatershedboard.com