

Target: We want clean water in our watershed.

Indicators:

- E. coli levels are within acceptable provincial and health authority guidelines for swimming and recreation.
- TSS (total suspended solids, or turbidity) levels in the Cowichan watershed consistently meet accepted provincial water quality objectives.

Rationale

The BC Ministry of Environment (BCMOE) had set water quality objectives for the Cowichan-Koksilah watersheds. Water sampling in repeated years showed failures to meet some of those objectives in some areas, pointing to areas of concern.^{1 2} In addition, there were concerns about swimming closures, and contaminated wells in the lower Cowichan River area.

Progress

Progress on this target is closely linked to achievements in the related targets for estuary health and public health due to the interconnectivity between these values (see related target profiles for more information).

Water quality testing: An early focus for the CWB and its partners was to follow up on BCMOE's observations of pollution levels exceeding the objectives set for the Cowichan-Koksilah rivers³. In 2012 Cowichan Valley Regional District (CVRD) and Cowichan Tribes partnered on a \$200,000 Cowichan Watershed Partnership Project to assess water quality priorities. In 2013 CWB undertook a further round of attainment sampling which has since been repeated a third time, from the headwaters to tidal waters, in 2017 and 2018. Although results have generally been good, samples taken from the lower Koksilah, Cowichan Bay tributaries and Cowichan Bay itself have revealed high levels of phosphorus, turbidity and coliform bacteria. DNA tracking turned up two prominent sources of the coliforms: human and bovine.



¹ McKean, C.J.P. 1989. Cowichan-Koksilah Rivers Water Quality Assessment and Objectives Technical Appendix. Water Management Branch, Ministry of Environment. Victoria, British Columbia.

² CVRD 2010 State of the Environment Report.

³ McKean, C.J.P. 1989. Cowichan-Koksilah Rivers Water Quality Assessment and Objectives Technical Appendix. Water Management Branch, Ministry of Environment. Victoria, British Columbia.

Environmental Farm Plan: After water quality testing revealed issues arising from farm runoff, CWB members visited with local dairy farmers to share large aerial photos pinpointing the extent of coliform contamination. They invited them to a workshop on the issue, held June 19, 2013 and hosted by the BC Ministry of Agriculture (MOA) and the CWB. Entitled "Keeping Your Farm's Runoff Clean," the workshop included information on the autumn 2012 water sampling results; regulations on manure management; tips on maintaining clean runoff; and Washington State's environmental farm plans. This led to a successful Group-based Environmental Farm Plan (GEFP) for dairy producers in the area to identify best management practices and provide funding support to improve nutrient management. A second round of outreach meetings in the Koksilah watershed was carried out in 2018, with participation from the agricultural community, MOA and Fisheries, Lands, Natural Resource Operations and Rural Development (FLNRORD). Water quality monitoring, coupled with support for agricultural education and nutrient management upgrades, is continuing.

Municipal Sewage: The Joint Utility Board (JUB) plans to move the sewage effluent outfall pipe from the Cowichan River to an ocean outfall location. The JUB is a secondary sewage treatment partnership between the Municipality of North Cowichan, the City of Duncan, Cowichan Tribes, and the CVRD. Recent low water levels in the river have challenged the JUB to meet dilution requirements for the treated effluent. Federal funding for the project was announced in 2016. Work is ongoing to resolve this issue.

Monitoring

Regularly testing the water quality throughout the watershed is important to gauge changes over time. In 2017, the CWB conducted a major water quality attainment sampling initiative with local partners to follow up on earlier sampling, and funding is in place to continue sampling into 2018-19. In 2017 this "citizen science" initiative engaged students and volunteers with several stewardship groups to take over 1000 water samples from close to 40 sites in local rivers (Cowichan, Somenos, Quamichan and Koksilah), as well as the south Cowichan area, and over 20 sites in and around Cowichan Bay. The data will supplement the previous attainment sampling, as well as other studies (2010-2012) that assessed water quality after the Cowichan River's Stoltz Bluff was rebuilt in 2006 to keep sediment from destroying spawning beds.

Next Steps

- Ongoing attainment sampling programming delivered in partnership with MOE, local government and ENGOS
- Partner with MOE to create water objectives for Cowichan Bay tributaries and marine environment
- Complete Cowichan water quality attainment reports
- Outreach to Koksilah agricultural community on irrigation and nutrient management
- Report out to greater community on water quality group findings