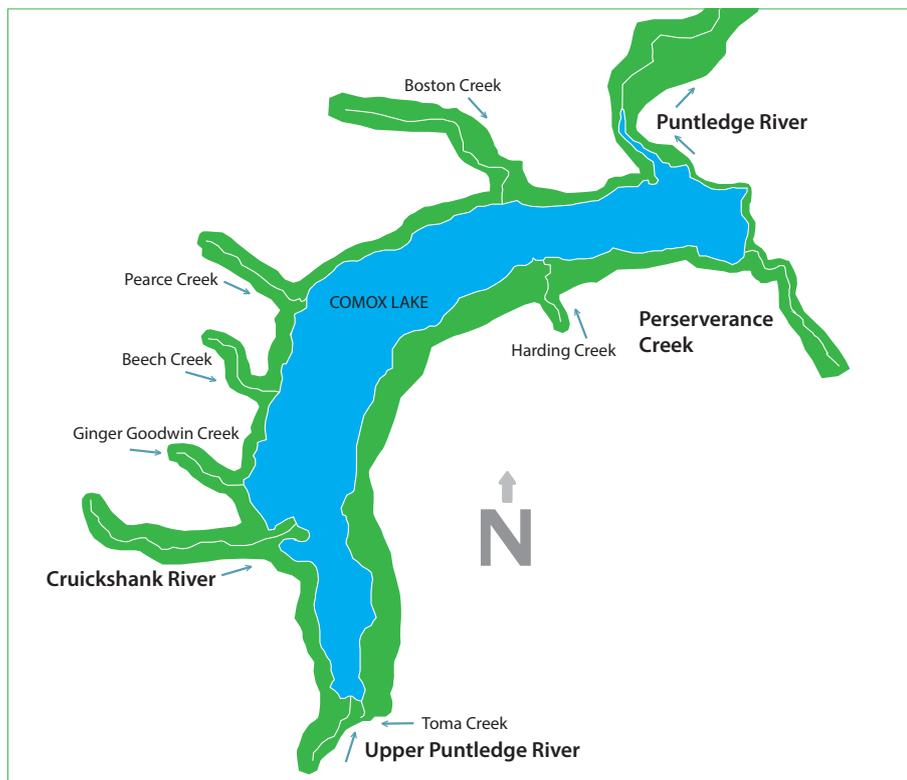


# MONITORING WATER QUALITY

The Comox Valley Water System (CVWS) draws its supply from Comox Lake reservoir. This system provides drinking water to approximately 45,000 residents who work and play in Courtenay and Comox. We are lucky to have 'very good' water quality in Comox Lake ~ let's keep it that way!

## >> A HEALTHY WATERSHED

A watershed is an area that drains to a common outlet. The area of land that drains into Comox Lake is approximately 461 sq. km and includes much of Strathcona Park. In the Comox Lake watershed, there are many smaller, sub-watersheds. A healthy watershed depends on the activity in the watershed and the natural composition of the watershed including the topography, geology, soils, vegetation, wildlife and weather patterns.



## >> SOURCE WATER QUALITY

The quality of water in Comox Lake is normally excellent, except when very high rainfall events affect the turbidity, or cloudiness, of the water. The water is clear, cold, very low in nutrients and has few organic materials that might negatively react with the disinfection processes.

## >> DRINKING WATER QUALITY

Monitoring of drinking water quality is vital to ensuring the highest standard possible. The Drinking Water Protection Act outlines that a water supplier must test the water as it travels from the source, through the distribution network and to the end users. Water samples are taken by qualified water operators and sent for testing to an accredited laboratory. For the Comox Valley Water System (CVWS), testing is required by Island Health as a condition of the Operating Permit.

## >> DAILY TESTING

It is important to continuously monitor the water so that the CVRD can ensure optimal water quality. Samples are tested weekly for bacteria and are monitored 24/7 for:

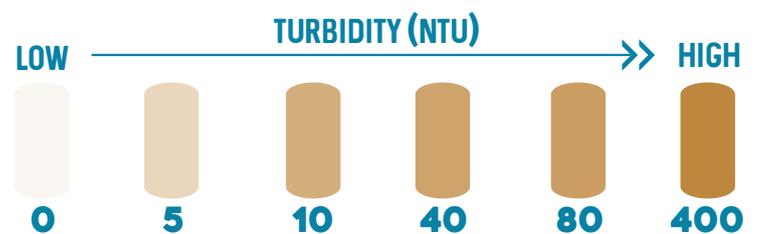
- turbidity; an alarm will alert staff if reading goes over accepted standards
- chlorine residuals to ensure the water remains disinfected; an alarm will alert staff
- pH, temperature & UV transmittance



**DID YOU KNOW THAT** the connection between water quality and illness was not made until 1854 in England?

## >> IMPORTANCE OF TURBIDITY

Turbidity is a measurement of water clarity. The more suspended particles in the water, the higher the turbidity. These particles can be made of silts and clays, decomposed plant materials and microscopic organisms.



### How is turbidity measured?

Turbidity is measured by passing a beam of light through a water sample to a sensor. It is measured in nephelometric turbidity units (NTU) and when readings are greater than 5 NTU, the cloudiness can be detected by the human eye. The 'Drinking Water Treatment Objectives for Surface Water in BC' state that turbidity levels entering the drinking water system should be under 1 NTU.

### Some causes of turbidity are:

- Phytoplankton
- Breakdown of leaf litter on the forest floor
- Runoff from roads
- Sediments from wind and wave erosion
- Algae growth
- Stream erosion

### Impact of turbidity

At high levels, organic suspended particles may attach to chlorine and reduce its disinfection capacity. It may also indicate that bacteria or pathogens may be present, but turbidity is not always associated with pathogens.

## >> BEST INDICATOR OF WATER HEALTH

The most common indicator of water health is the presence of microorganisms. They are invisible to the naked eye and water that appears clear may be deceiving. E.coli is considered a very good indicator of a potential pathogen because it is associated with fecal matter. The CVRD tests for bacteria and parasites, including E. coli on a regular basis and disinfects the water with chlorine to prevent pathogens from entering the water system.

## >> WATER QUALITY NOTIFICATIONS

Water can become unsafe for human consumption in a variety of ways.

- Heavy rainfall or storms
- Accidental spills
- Wildfire
- Cross-contamination
- Intentional harm
- Natural disasters

If there is a suspected problem with water quality, the CVRD and Island Health work together on notifying the public. A notification can be in the form of a:

- Water quality advisory
- Boil water notice
- Do not consume notice

A **Water Quality Advisory** is issued when the threat may be minimal for the average user but elevated for certain populations such as those with poor immune systems.

A **Boil Water Notice** is issued when conditions exist that make it impossible to ensure the safety of the water without boiling it first.

A **Do Not Consume water notice** is issued when the threat is associated with chemical or physical parameters, or is of an unknown nature.

## >> MAINTAINING WATER QUALITY

For the latest updates on any changes to your water quality, refer to [www.comoxvalleyrd.ca/waterquality](http://www.comoxvalleyrd.ca/waterquality)