

Water quality of the South McQuesten River



South McQuesten River, view downstream of the site after the 2019 wildfire.

The South McQuesten River below Flat Creek is one of 14 water quality sampling stations in Yukon as part of the Canada-Yukon Water Quality Monitoring Network. This site has been monitored on a monthly basis since 2005 and is currently monitored by a member of the Mayo Community. The data collected at this station is used to calculate a Water Quality Index (WQI).

What is the WQI?

The purpose of the Water Quality Index is to provide a general idea of water quality conditions at a site. Every three years, the water quality index for a site is calculated, which produces a single value between 0 (poor) and 100 (excellent). These values are grouped to give an idea of the aquatic health of the site (see WQI categories). The natural water quality and potential concerns differ for each site and therefore different sets of parameters are measured. The set of parameters used to calculate the WQI at the South McQuesten River are arsenic, copper, lead, nitrogen, pH, phosphorous, silver, temperature and zinc.

Why is monitoring important?

Clean water is an essential element for healthy aquatic ecosystems, but as humans continue to develop the surrounding landscape, the quality of water can become jeopardized. By monitoring surface water throughout Yukon and Canada, we can assess the current and trending health of lakes, rivers, and streams.

Results

The 'marginal' and 'fair' scores are likely due to a combination of naturally elevated metal concentrations found across Yukon and high levels of placer and quartz mining activities occurring along the river and its tributaries. The recent 'Marginal' scores indicates that aquatic life may frequently be threatened or impaired and water quality often exceeds guidelines by a considerable margin.

WQI categories

Excellent (95-100)	Aquatic life is not threatened or impaired. Measurements never or very rarely exceed water quality guidelines.
Good (80-94)	Aquatic life is protected with only a minor degree of threat or impairment. Measurements rarely exceed water quality guidelines and, usually, by a narrow margin.
Fair (65-79)	Aquatic life is protected, but at times may be threatened or impaired. Measurements sometimes exceed water quality guidelines and, possibly, by a wide margin.
Marginal (45-64)	Aquatic life frequently may be threatened or impaired. Measurements often exceed water quality guidelines by a considerable margin.
Poor (0-44)	Aquatic life is threatened, impaired or even lost. Measurements usually exceed water quality guidelines by a considerable margin.

WQI scores of the South McQuesten River

	2005-2007	2006-2008	2007-2009	2008-2010	2009-2011	2010-2012	2011-2013	2012-2014	2013-2015	2014-2016	2015-2017	2016-2018	2017-2019
WQI Score	64.4	64.3	64	70	69.5	70.1	70.4	70.6	70	63.8	63.7	63.5	64.1

