Credit River

Credit River in Hidden Valley Park (Savage, Minn.) Photo by Tim Kiser

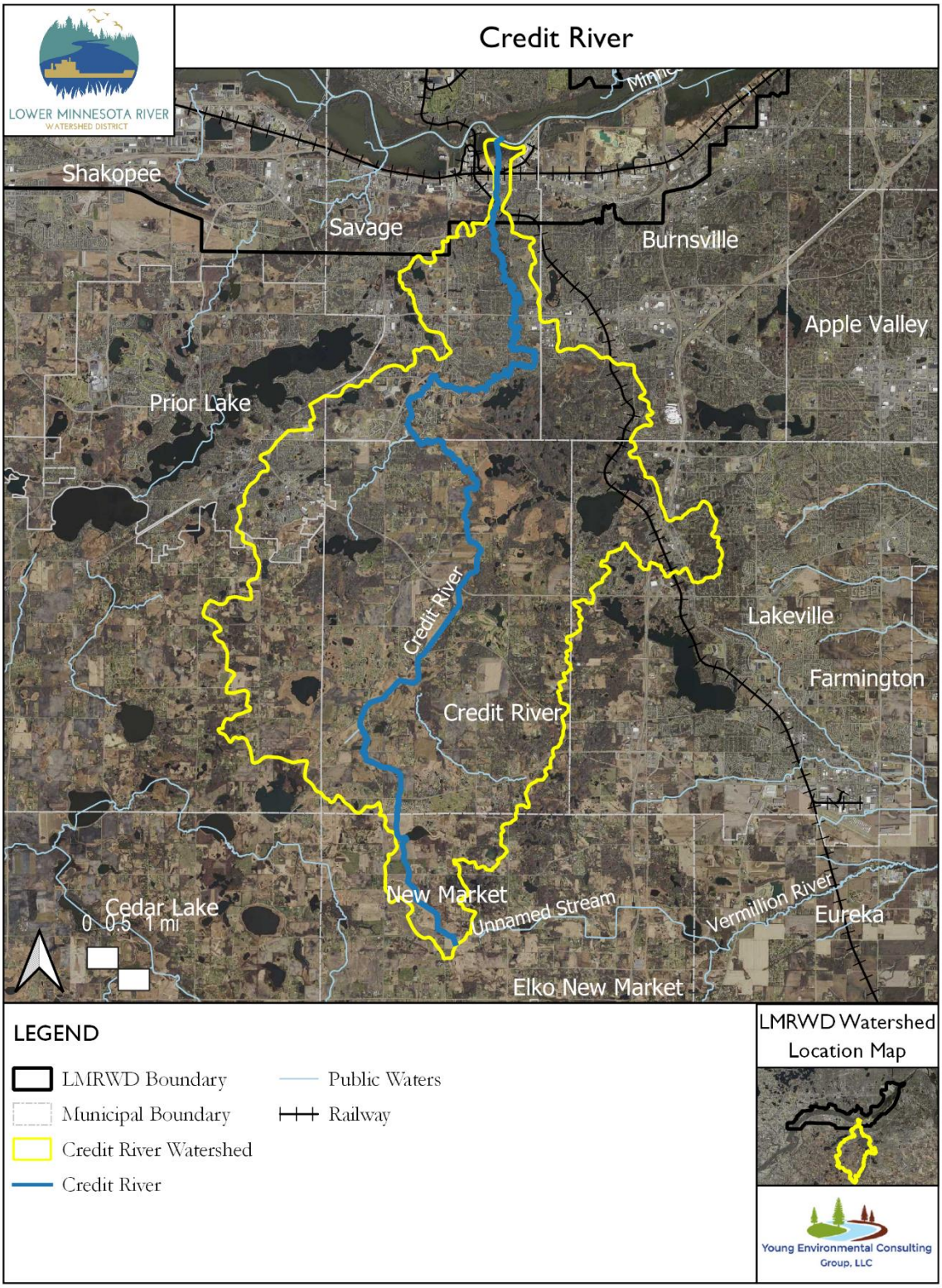
Minnesota Department of Natural Resources (MNDNR) stream ID M-055-007

Minnesota Pollution Control Agency (MPCA) sites for Credit River are listed in the following table. The table also identifies when and what measurements were made at the site. Those data can be accessed at https://webapp.pca.state.mn.us/surface-water. Although many sites were sampled, most of the sites are near each other in a park in Savage, approximately two miles (three kilometers) upstream from the confluence with the Minnesota River.

Site Identifier	Dates Sampled	Measurements
14MN059	2014	Fish Index of Biotic Integrity
90MN117	2001, 2010, 2014	Fish Index of Biotic Integrity
S000-304	1974	One sample of phosphorus, suspended solids, oxygen
S004-587	2006–2015	Turbidity, oxygen, pH, nutrients, bacteria
S004-591	2006–2008	Transparency, oxygen
S004-933	2008–2009	Biological productivity indicators
S004-935	2008–2019	2008–09: Biological productivity indicators; 2018–19: Transparency
S005-407	2008, 2013	2008: turbidity, oxygen, pH; 2013: transparency
S005-409	2008	Turbidity, oxygen, pH
S005-410	2008, 2019	2008: turbidity, oxygen, pH; 2019: transparency
S005-411	2008–2012	2008: turbidity, oxygen, pH; 2009–12: transparency
S005-412	2008	Turbidity, oxygen, pH
S005-413	2008	Turbidity, oxygen, pH
S005-414	2008, 2020	2008: oxygen, pH; 2020: transparency
S005-415	2008	Turbidity, oxygen, pH
S009-265	2016, 2019–2020	2016: oxygen, pH, nutrients, suspended solids; 2019–20: transparency

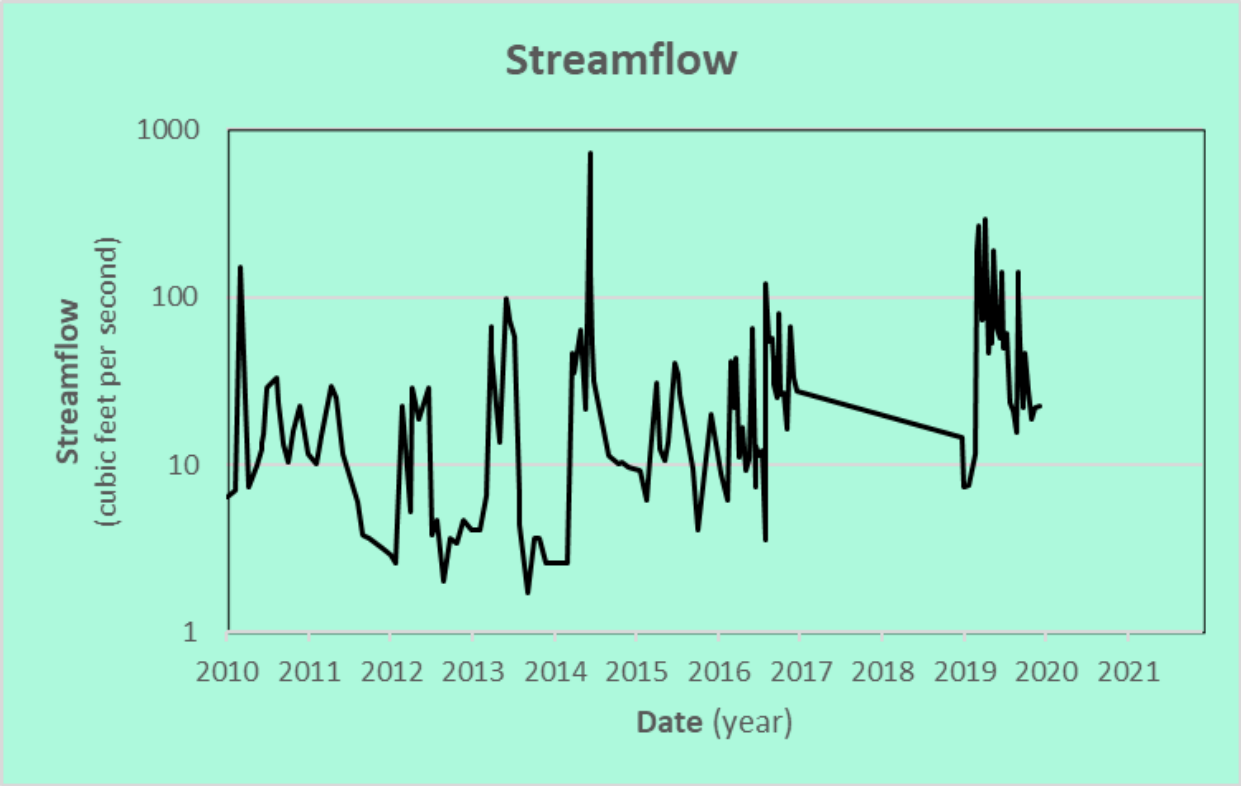
Credit River is a 21.5-mile- (34 kilometer-) long stream located in Scott County, Minnesota, that drains a 47-square-mile (12,200-hectare) watershed (MCES 2014). After flowing from the south through Savage, Minnesota, it empties into the Minnesota River. Upstream of the sampling site in Savage, land use is about 25% urban, 50% range and forest, and 15% agricultural, with the rest being water and wetland. Only the downstream portion of the river, near the city of Savage, is in the Lower Minnesota River Watershed District.

Credit River is impaired for aquatic life based on the results of benthic macroinvertebrate and fish bioassessments. Chloride concentrations also are a detriment to aquatic life. Aquatic recreation in the river is impaired because of *Escherichia coli* (*E. coli*) levels (MPCA 2022).

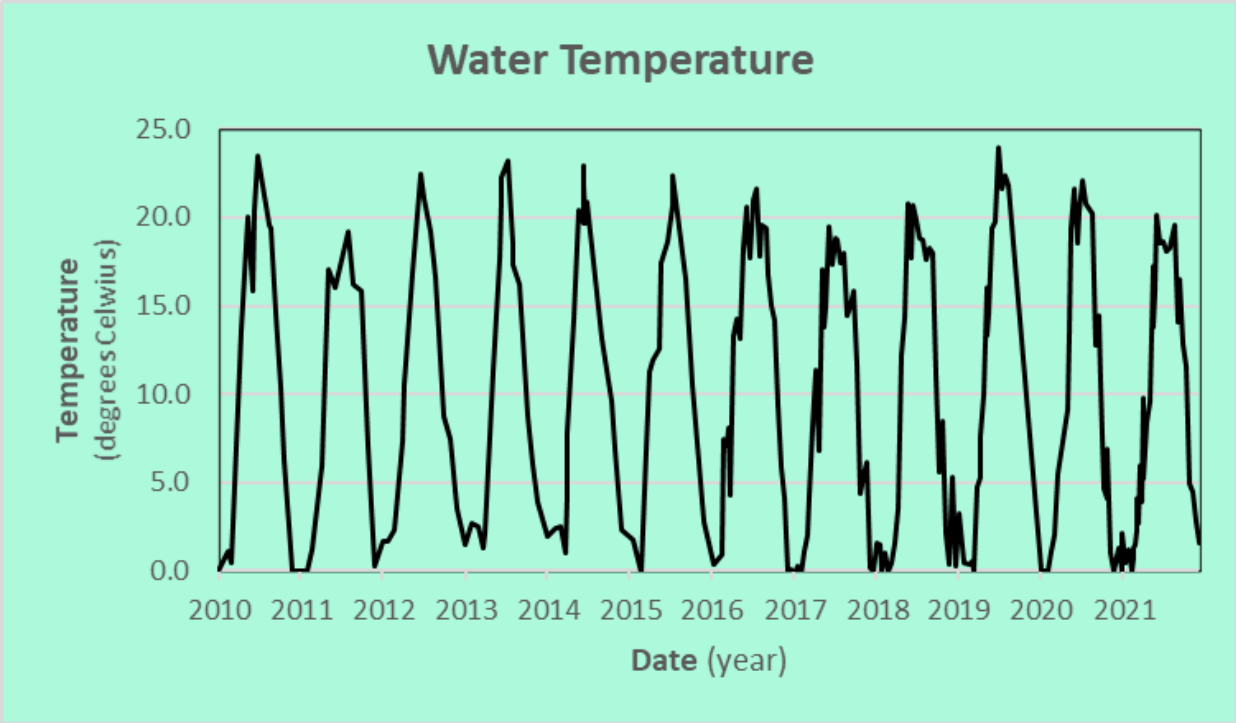

Credit River
LOWER MINNESOTA RIVER
WATERSHED DISTRICT
Shakopee
Savage
Burnsville
Apple Valley
Prior Lake
Credit River
Credit River
Lakeville
Farmington
New Market
Unnamed Stream
Vermillion River
Eureka
Cedar Lake
Elko New Market
0 0.5 1 mi
LEGEND
LMRWD Boundary
Municipal Boundary
Credit River Watershed
Credit River
Public Waters
Railway
LMRWD Watershed Location Map
Young Environmental Consulting Group, LLC

Credit River is sampled by the Metropolitan Council Environmental Services (MCES) as part of the Comprehensive Water Quality Assessment of Select Metropolitan Area Streams (MCES 2014). Selected results from the analysis of samples collected at a site in Savage, Minnesota, 0.9 miles (1.4 kilometers) above its mouth were obtained from the website[i] and are summarized in the following graphs.

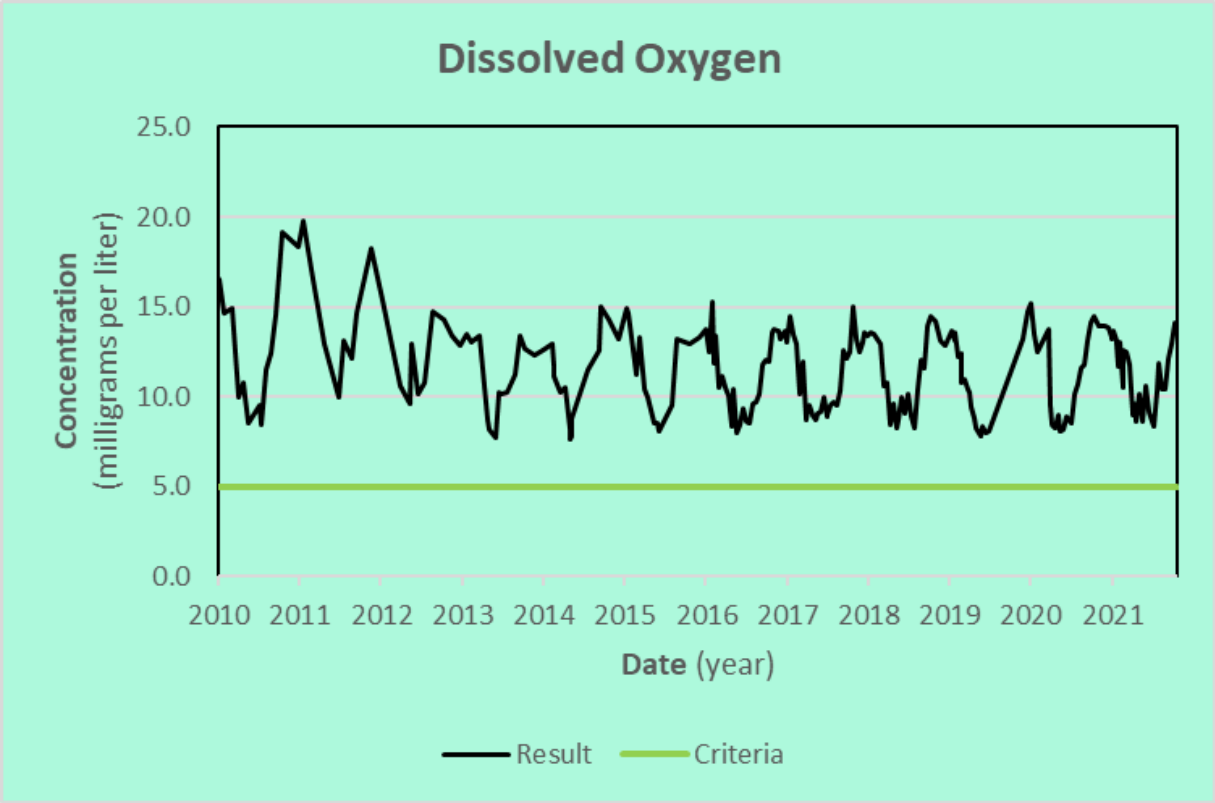
Samples collected from Credit River's streamflow are shown below. The creek's flow ranged from 1.7 to 732 cubic feet (0.048 to 20.7 cubic meters) per second. The most common flow during sampling was about 37 cubic feet (1.05 cubic meters) per second.



The water temperature of Credit River is important because warmer water holds less dissolved oxygen (DO) needed by many aquatic organisms. Creek temperatures fluctuate seasonally approaching 77° Fahrenheit (25° Celsius) in the summer and falling near 32° F (0° C) in the winter.

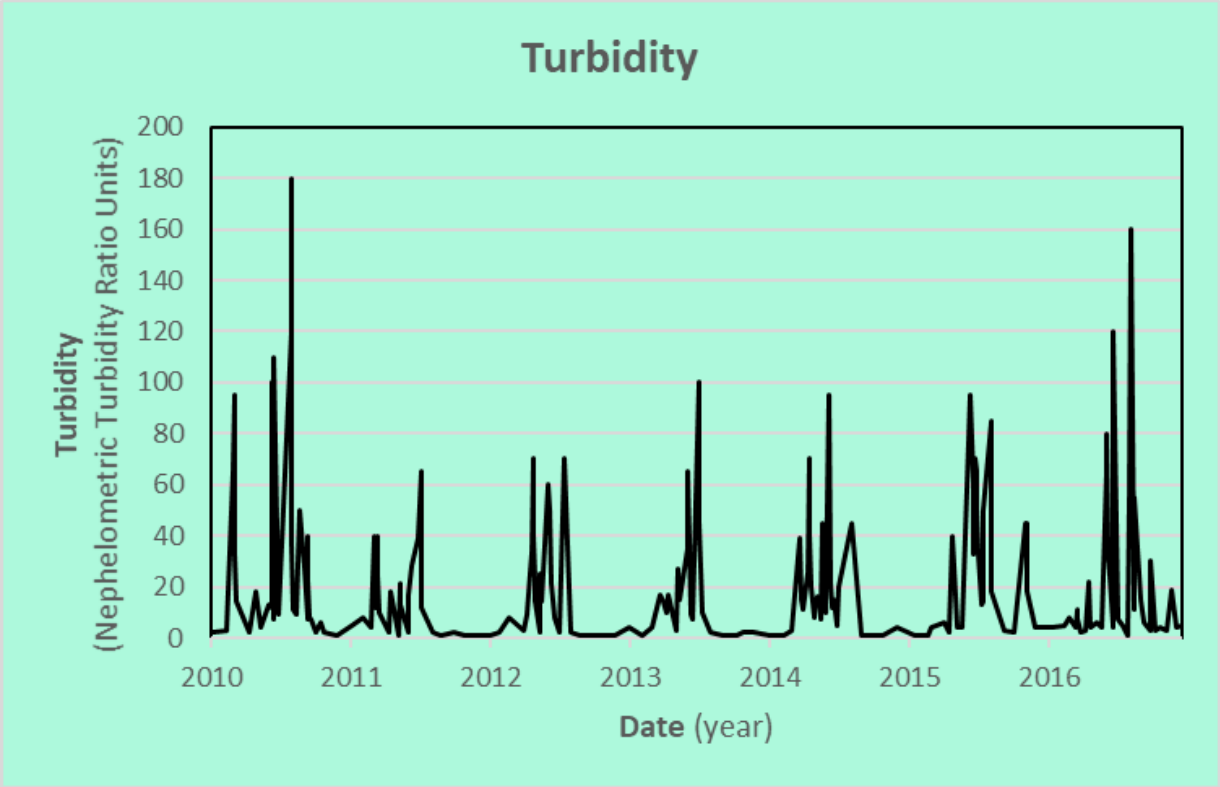


DO concentration measurements show that Credit River remains well oxygenated. Aquatic animals typically need at least 5 mg/L of DO (MNDNR 2021). Seasonal fluctuations are normal because oxygen solubility changes with water temperature.

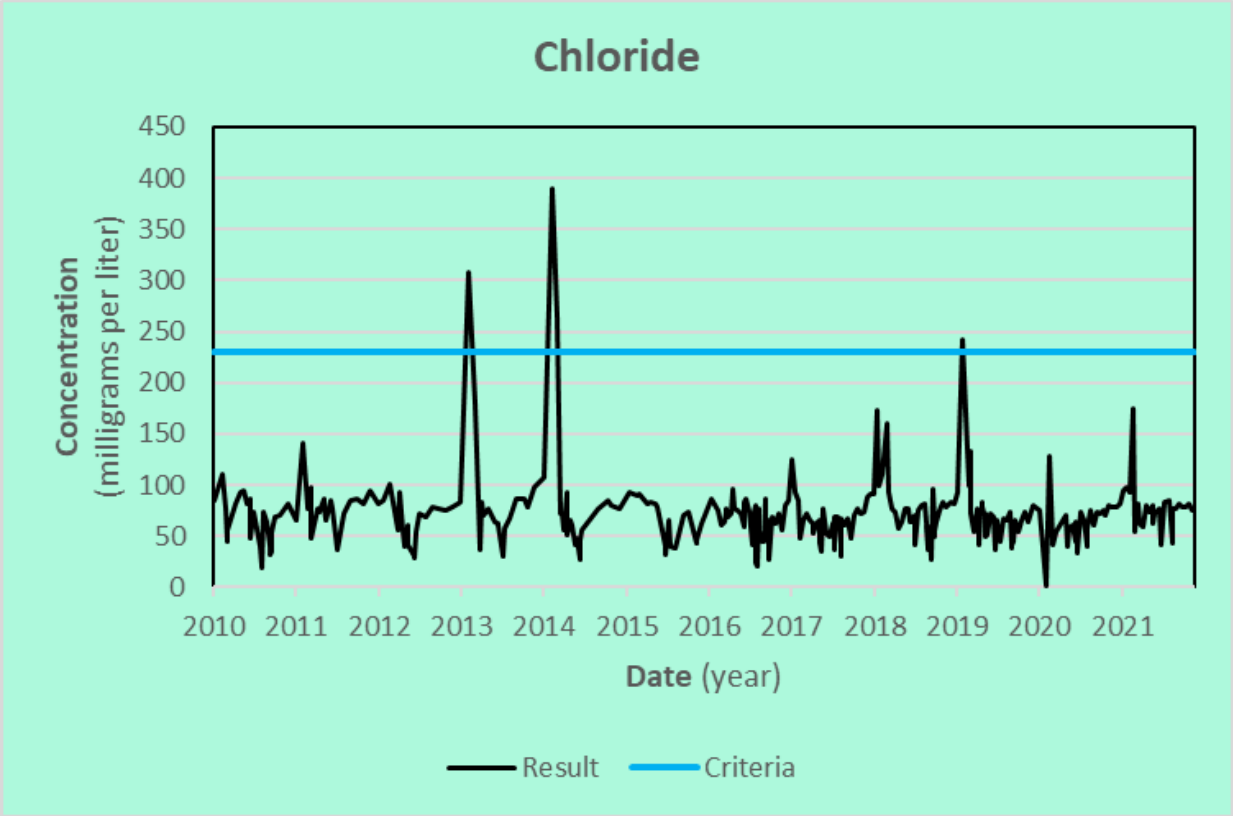


The following graph shows the turbidity, a measure of water clarity, of Credit River. High turbidity in a stream indicates cloudy water carrying large amounts of fine sediment that interferes with visibility. Low turbidity implies that less sediment is carried by the stream. Streams receiving runoff tend to be turbid when they might otherwise run clear.

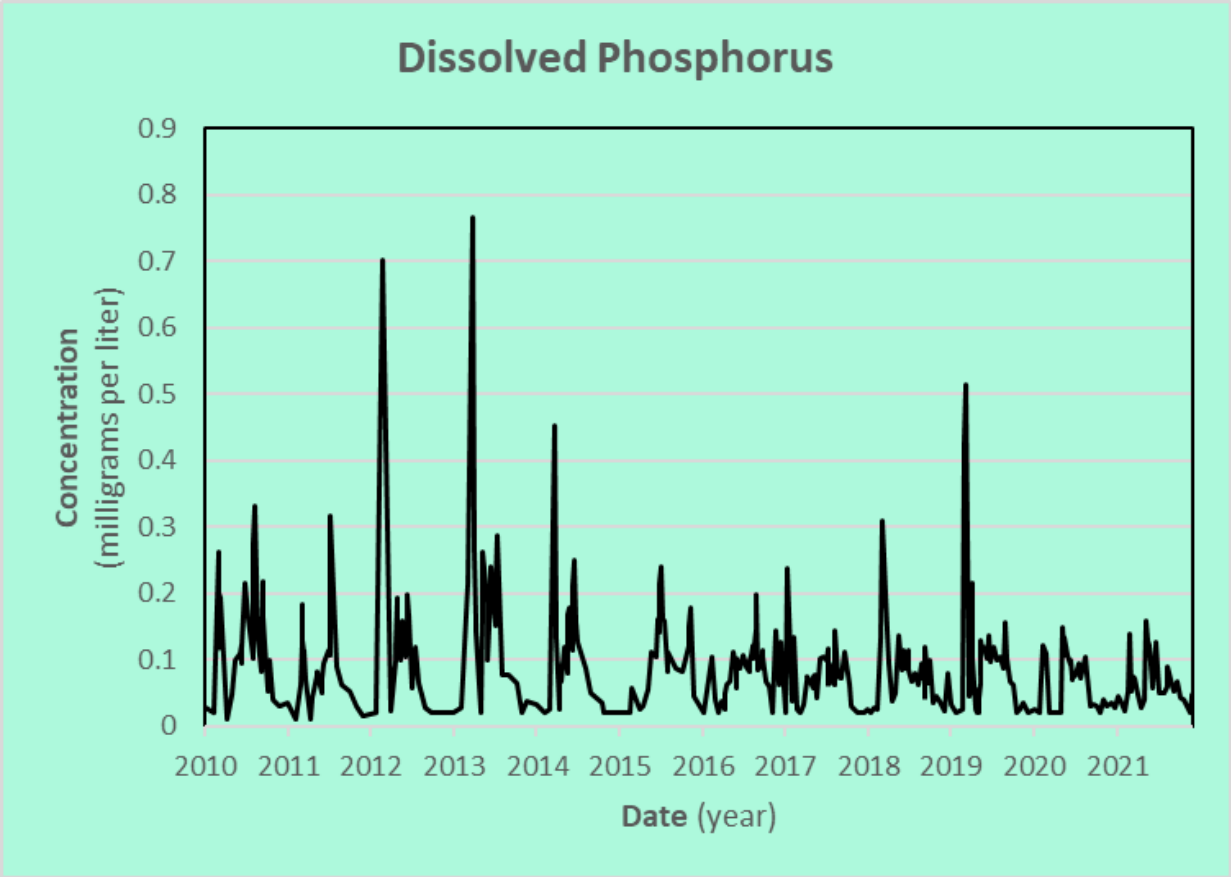
Various methods have been used since 2010 to measure turbidity in Credit River, and the results using different methods are not comparable. Only the measurements reported in nephelometric turbidity ratio units (NTUs) are shown in the chart below.



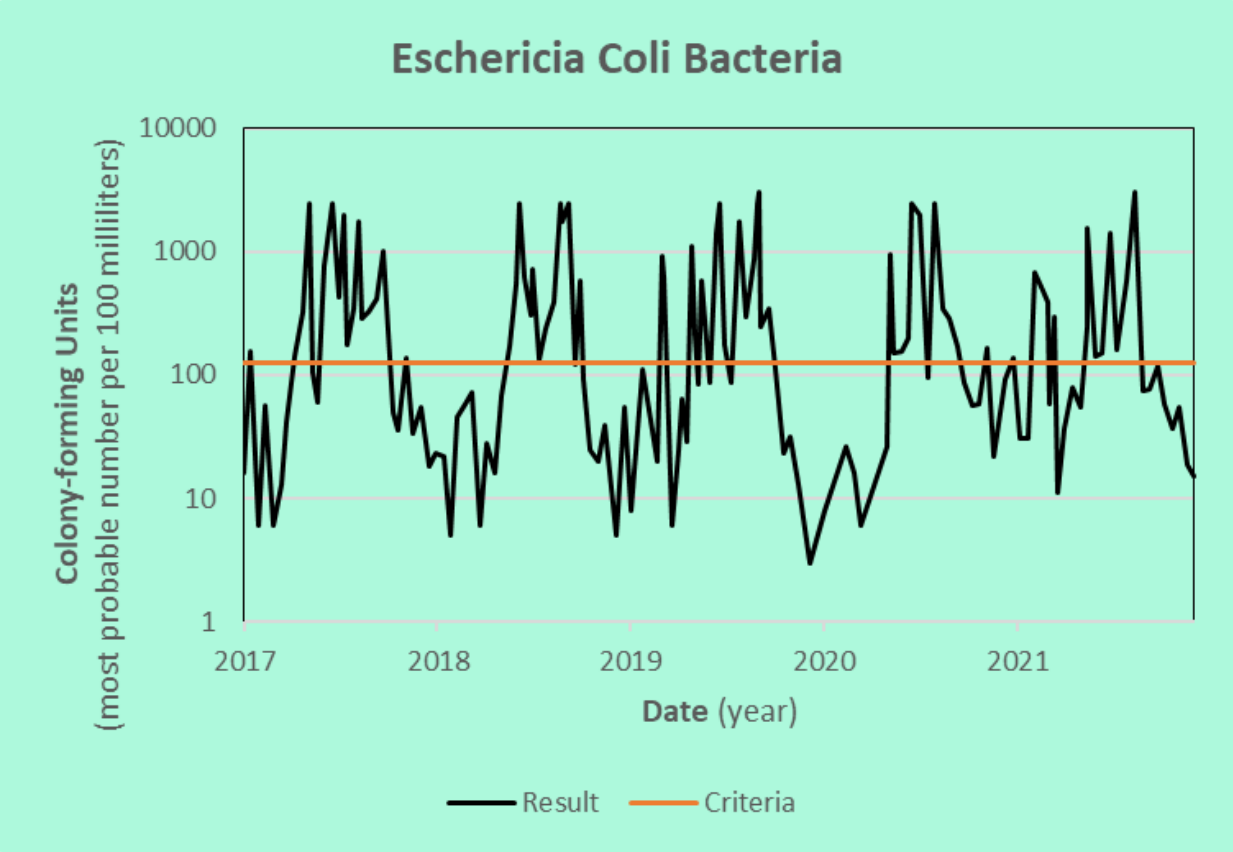
Chloride, a primary component of road deicing and water-softening salt, represents a growing concern for many streams and lakes. The chronic standard for chloride in Minnesota waters to protect cool and warm water fisheries is 230 mg/L (MPCA 2018). Chloride concentrations measured in Credit River are usually far below the chronic standard but occasionally exceed the standard. Peak concentrations were measured in the winter.



Phosphorus is an essential plant nutrient that is carried by streams. Naturally occurring phosphorus concentrations may be enriched from animal waste and fertilizers, and phosphorus is often introduced with runoff. Phosphorus is often associated with sediment but is more available to plants when dissolved in the water. The chart below shows the phosphorus concentrations in samples from Credit River after the water has been filtered to remove the sediment-associated phosphorus, which generally is considered dissolved phosphorus.



E. coli is an organism used to indicate the amount of fecal contamination in lakes and streams. Swimming in or ingesting water with high levels of *E. coli* could result in illness. The allowable limit is a monthly average of fewer than 126 colony-forming units per 100 milliliters of water between April and October (MPCA 2021). Credit River water often has levels of *E. coli* that could exceed the allowance for recreational and human health.



References

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MCES. 2014. *Credit River Fact Sheet.* Fact Sheet, St. Paul, MN: Metropolitan Council Environmental Services. Accessed January 03, 2022. https://metrocouncil.org/Wastewater-Water/Services/Water-Quality-Management/Stream-Monitoring-Assessment/Minnesota-River-Tributary-Streams-Assessment/Mn-River-Trib-Assessment-Reports/Credit-River-Factsheet.aspx.

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[i] "NOTICE: Data are made available pursuant to the Minnesota Government Data Practices Act (Minnesota Statutes Chapter 13). THE DATA ARE PROVIDED TO YOU AS IS AND WITHOUT ANY WARRANTY AS TO THEIR PERFORMANCE, MERCHANTABILITY, OR FITNESS FOR ANY PARTICULAR PURPOSE. These data were developed by the Metropolitan Council for its own business purposes. The Metropolitan Council makes every effort to assure that the data and the associated documentation are error free, complete, current, and accurate; however, the Metropolitan Council does not guarantee this. The Metropolitan Council is NOT responsible for any consequences resulting from your use of the data. You should consult the available online documentation or contact the staff contact listed in the EIMS data catalog to determine the limitations of the data. If you transmit or provide the data (or any portion of it) to another user, the data must include a copy of this disclaimer."