Carver Creek

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ENVIRONMENTAL SERVICES

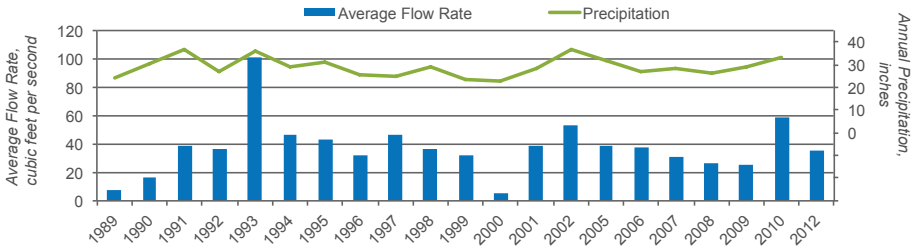
Carver Creek is located in the western metropolitan area. It has two headwater branches, one in Waconia Township and one in Camden Township. The creek runs through lakes (including Lake Waconia), wetlands and the Minnesota Valley National Wildlife Refuge, providing habitat for wildlife and opportunity for recreational activities, before discharging into the Minnesota River.

Flow

Stream flow, or the rate of water flowing in a stream, affects aquatic life and the ecosystem. High flows can lead to flooding and erosion, and transport pollutants.

Carver Creek flows year-round due to lake outflow, groundwater, and drain tile flow. Its flow is also influenced by how much rain or snow has fallen in any given year. Since 2003, the average flow in Carver Creek is a little more than 36 cubic feet-per-second. At that rate, it would take Carver Creek seven days to fill the Target center in Minneapolis.

Carver Creek Annual Flows and Precipitation



Sediment

Sediment from poorly-managed construction sites, farm fields, or eroded stream banks and gullies can decrease the light available in streams and harm aquatic life. Another term for sediment is “total suspended solids.”

Carver Creek carries an average of 19.3 million pounds of sediment into the Minnesota River each year (enough to fill 584 15-ton dump trucks).

Nutrients

Nutrients, like nitrogen and phosphorus, are necessary for stream health. However, elevated nutrient levels, caused by materials like fertilizers, animal manure, pet waste or grass clippings, can cause excessive algae growth and harm aquatic wildlife, insects and fish.

Carver Creek has a higher concentration of nitrogen (measured as nitrate) than almost all of the other streams monitored by MCES in the Minnesota River basin. Phosphorus concentration in Carver Creek is among the lowest of the streams monitored by MCES in the basin.

Aquatic insects

Aquatic insects are excellent indicators of the overall health of a stream

FAST FACTS

Major river basin: Minnesota River

Water source: Surface water runoff, lake outflow, agricultural drain tile flow, groundwater

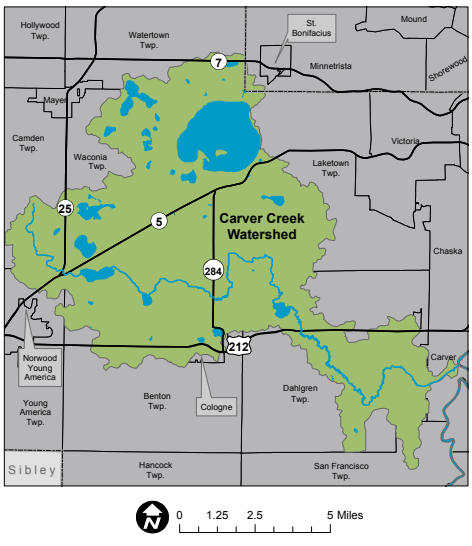
Length: 31 miles

Watershed area: 83 square miles

Watershed land use: Agriculture, open space, bluff lands, some urban

Watershed management organization: Carver County Watershed Management Organization

Year first monitored: 1989



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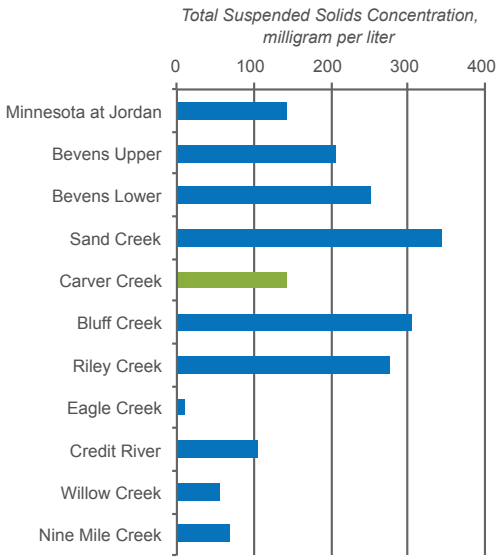
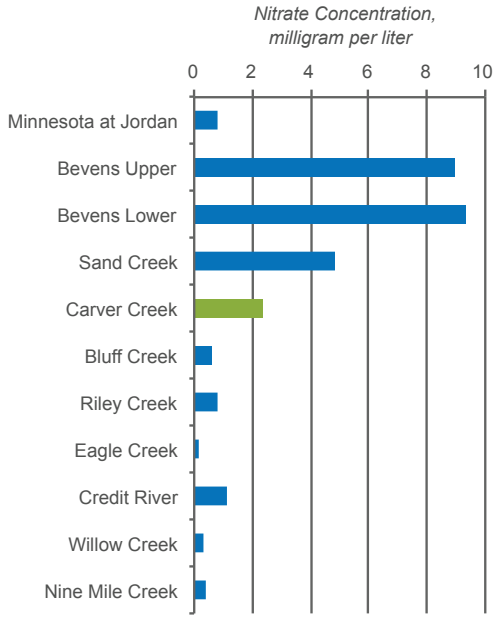
Median Sediment Concentrations in the Minnesota River and Tributary Streams, 2003–2012



Median Nitrate Concentrations in the Minnesota River and Tributary Streams, 2003–2012



since they spend the majority of their lives in the water, and are an important food source for fish, birds and other wildlife. Carver Creek has a consistent population of aquatic insects, but analysis indicates they are being affected by pollutants. Improved water quality would likely increase the number of aquatic insects in the stream.

Chloride

Chloride, one component of salt, is typically used for winter road, parking lot, and sidewalk maintenance and home water softening. Large-lot rural, residential areas also have many individual on-site septic systems to manage wastewater since there is no centralized sewage system. Septic systems can leak chloride into the groundwater and eventually pollute the stream.

Carver Creek has a similar concentration of chloride to other streams monitored by MCES in the Minnesota River basin, which likely reflects chloride entering the stream from winter salt application to roads and sidewalks and from septic systems.

Preserving our Creeks

The Carver County Watershed Management Organization (WMO) is the local governing body responsible for maintaining the watershed. They partner with private landowners, cities, state agencies, and Carver Soil and Water Conservation District to complete various improvement projects, including:

- Installing vegetated buffer strips along creeks and ditches
- Restoring wetlands
- Initiating a stream bank erosion inventory to identify potential pollutant sources and future projects
- Completing stormwater best management projects

Is the Stream Improving?

Long-term data analysis and computer modeling indicate that Carver Creeks' water quality has declined, because phosphorus and nitrate levels have increased, though the cause of this increase is unclear. Its phosphorus level is more than the Minnesota River at Jordan, which contributes to the degradation of the river; its nitrate concentration is less than the Minnesota River at Jordan, and is likely not causing water quality degradation in the river.

Carver Creek's sediment levels have decreased, causing an improvement in water quality for that pollutant.

Protecting the Region's Water Resources

This work supports the regional polices established in the Metropolitan Council's Thrive MSP 2040 and Water Resources Policy Plan to collaborate with partners to promote the long-term sustainability and health of the region's water resources, including surface water, wastewater and water supply.

For more information

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Visit www.metrocouncil.org/streams for the full results of the Comprehensive Water Quality Assessment of Select Metropolitan Area Streams.

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