photo credit Belwin Conservancy

Valley Creek

www.metrocouncil.org
ENVIRONMENTAL SERVICES

Valley Creek is a small naturally reproducing trout stream in Washington County that extends from Afton to the St. Croix River. Valley Creek provides opportunities for fishing and wildlife viewing. The creek and its surrounding area are a valuable scenic amenity for the community.

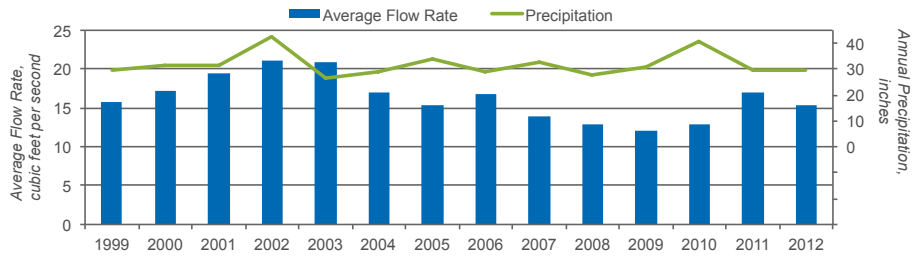
Flow

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

Valley Creek flows year-round since it is partly fed by groundwater. Flow levels are also influenced by the amount of rain and/or snow that falls.

The cold groundwater allows the stream to support trout and other types of cold-water aquatic life. During the last 14 years, the average flow in Valley Creek was 16 cubic feet-per-second. At that rate, it would take Valley Creek 16 days to fill the Target Center in Minneapolis!

Valley Creek Annual Flows and Precipitation



Nutrients

Nutrients, like nitrogen and phosphorus, are necessary for stream health. However, elevated 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.

On average, Valley Creek has the highest average concentration of nitrogen (measured as nitrate) of all of the streams monitored by MCES in the St. Croix River basin and is higher than the St. Croix River. The nitrate concentrations are most likely caused by the high level of nitrates in the groundwater.

Phosphorus concentrations in Valley Creek are the second lowest of the St. Croix River basin streams monitored by MCES, and lower than the phosphorus concentration in the St. Croix River.

Aquatic Insects

Aquatic insects are excellent indicators of the overall health of a stream, since they spend the majority of their lives in the water. Aquatic insects are an important food source for fish, birds, and other wildlife.

Valley Creek has a healthy population of aquatic insects. This means the stream is clean enough to provide a meal for the trout that live in it!

FAST FACTS

Major river basin: St. Croix River

Water source: Surface water runoff and groundwater

Length: 3.6 miles

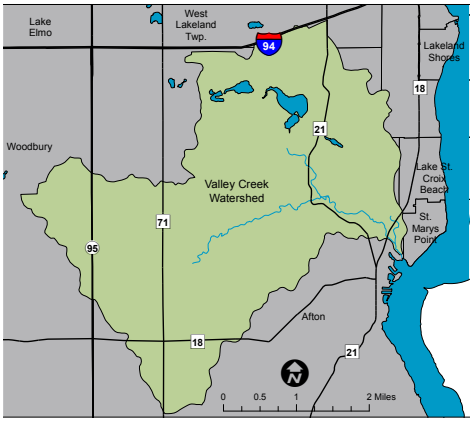
Designation: Coldwater Trout Stream

Watershed area: 12.5 square miles

Watershed land use: Agriculture, forest, grassland, some urban

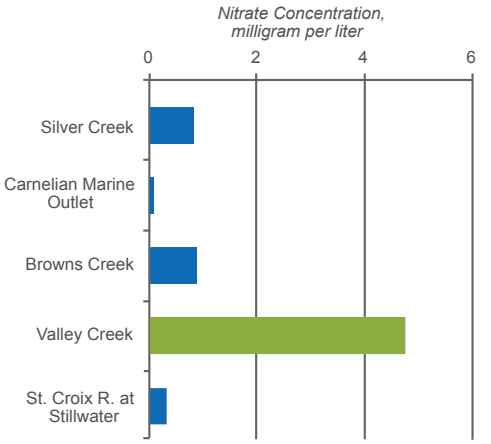
Cooperator organizations: Valley Branch Watershed District, Science Museum of Minnesota—St. Croix Watershed Research Station, and Washington Conservation District

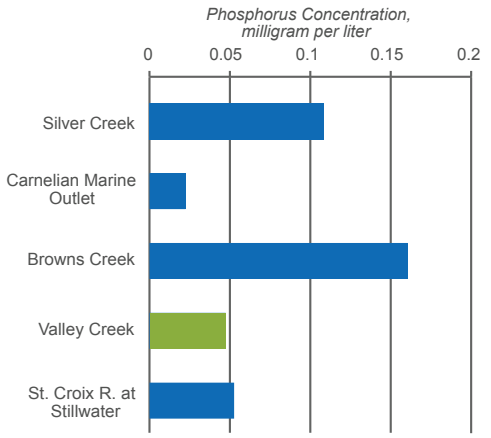
Year first monitored: 1999



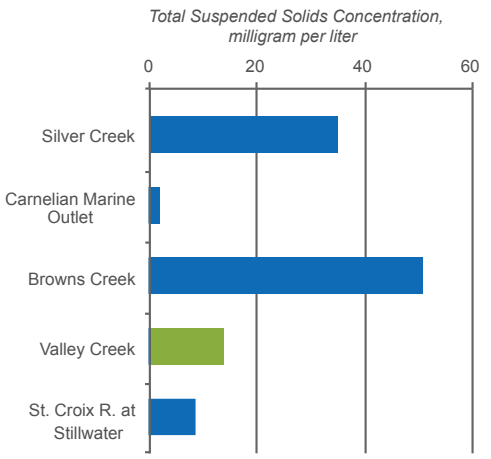
METROPOLITAN COUNCIL

Median Nutrient Concentrations in the St. Croix River and Tributary Streams, 2003–2012





Median Sediment Concentrations in the St. Croix River and Tributary Streams, 2003–2012



Sediment

Sediment from poorly-managed construction sites 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.”

Valley Creek sediment concentrations are low enough to support aquatic life. For the last ten years, the stream carried an average of 542,000 pounds of sediment to the St. Croix River every year. This amount of sediment would fill 18 15-ton dump trucks!

Preserving our Creeks

The Valley Branch Watershed District (VBWD) is the local governing body responsible for managing the Valley Creek watershed. They work with private landowners and organizations to complete restoration projects that improve Valley Creek water quality, including:

- Belwin Conservancy
- Minnesota Land Trust
- Trout Unlimited

Completed projects include:

- Constructing raingardens
- Stabilizing eroding ravines
- Stabilizing and re-vegetating 4,700 feet of stream in the watershed
- Land preservation
- Prairie and oak-savannah forest restoration

Is the stream improving?

Long-term data analysis and computer modeling indicate that Valley Creek’s water quality has improved because phosphorus and sediment levels have decreased. However, the water quality has declined due to the increase of nitrate levels in the stream.

Valley Creek’s nitrate and sediment levels are higher than the St. Croix River at Stillwater, and could potentially contribue to the degradation of the river.

Protecting the Region’s Water Resources

This work supports the regional policies 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 visit **www.metrocouncil.org/streams** for the full results of the *Comprehensive Water Quality Assessment of Select Metropolitan Area Streams*.

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