RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT

2023 Update

Riley Creek

Riley Creek begins at lakes Lucy and Ann in Chanhassen and flows through three lakes - Susan, Rice Marsh, and Riley - before descending to the Minnesota River Valley. The creek has mild topography in its upper and middle watershed, but below Lake Riley the banks become steep.

Keeping Riley Creek healthy requires several tools and strategies. Conducting projects to stabilize streambanks and restore stretches of stream is one strategy. Cleaning and slowing rainwater runoff before it reaches the creek is another. Before either of these can be done, we need to understand how the creek is doing and where it needs the most help.

District staff and the Metropolitan Council have monitored the creek's water quality for almost 20 years. The District developed a tool to assess the creek: the Creek Restoration Action Strategy (CRAS). The CRAS uses water quality data, as well as information on erosion and habitat, to rank which creek stretches (sections) are doing the best and which are doing the poorest. CRAS scores for each stretch of stream are located on the next page.

The three major types of data used in creek monitoring

Water quality

District staff take samples at five sites during the summer. They gather information about nutrient levels (phosphorus), sediment, pH, and dissolved oxygen. This data lets us know how clean the water is and if it's healthy for plants, animals, and people.

Erosion

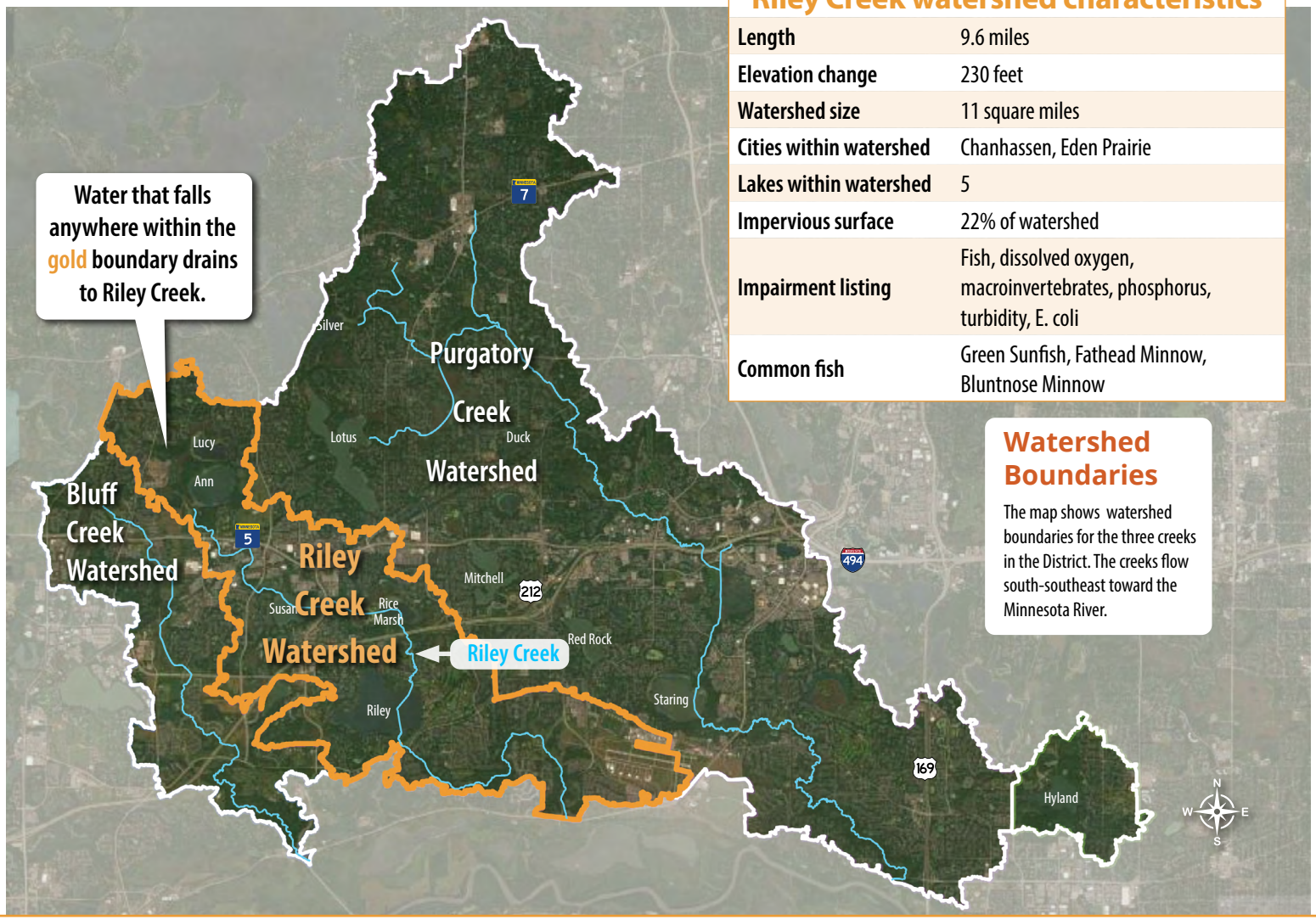
Every three years, staff walk sections of the creek. They note sites with erosion, its severity, and whether any structures like houses or bridges are at risk. Erosion is also a problem because any soil that erodes into the creek is a pollutant.

Habitat

Creeks are important habitat for insects, plants, fish, birds, and other animals. When staff check for erosion, they also assess the habitat. Reaches receive a score based on the quality of habitat they provide and whether it needs to be restored.

Riley Creek watershed characteristics

Length	9.6 miles
Elevation change	230 feet
Watershed size	11 square miles
Cities within watershed	Chanhassen, Eden Prairie
Lakes within watershed	5
Impervious surface	22% of watershed
Impairment listing	Fish, dissolved oxygen, macroinvertebrates, phosphorus, turbidity, E. coli
Common fish	Green Sunfish, Fathead Minnow, Bluntnose Minnow



Watershed Boundaries

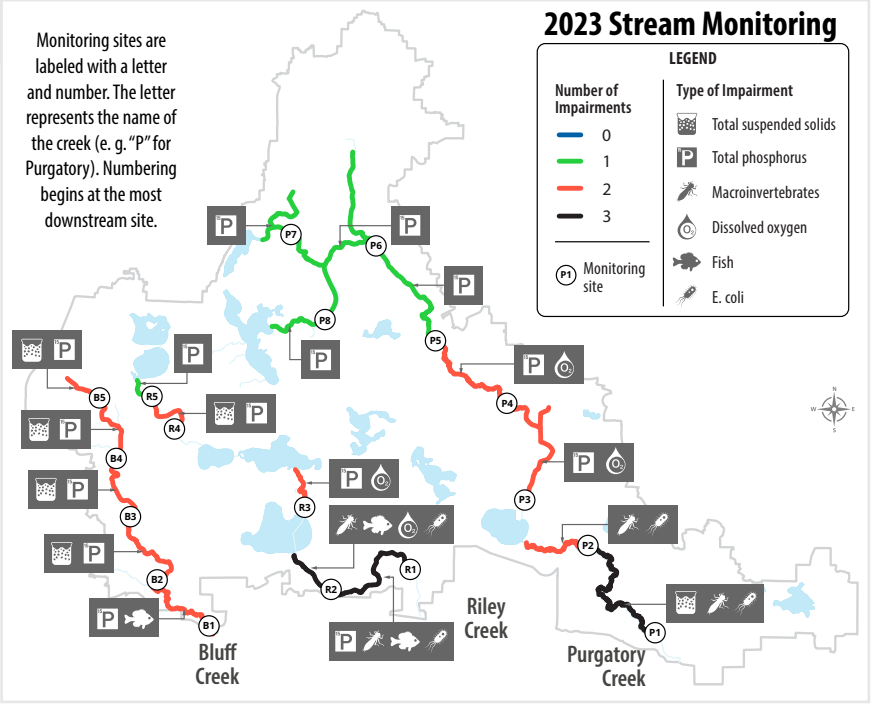
The map shows watershed boundaries for the three creeks in the District. The creeks flow south-southeast toward the Minnesota River.

2023 Stream Monitoring Results

Stream Water Quality Monitoring

In 2023, District staff collected and analyzed water samples every two weeks, April through September, to determine the average water quality of Bluff, Riley, and Purgatory creeks. The District monitors six impairment categories based upon standards set by the Minnesota Pollution Control Agency (MPCA)

In 2023, the continued drought significantly impacted the streams. Of the 18 regular sampling sites, 14 went dry or became stagnant at some point. From 2022 to 2023, stream water quality was reduced slightly across the district. Excluding the dissolved oxygen impairment, the number of water quality standards exceeded overall increased slightly from 2021 to 2022. Similar to previous years, Total Phosphorus (TP) was the water quality standard causing the most impairments in 2023 with 15 of the 18 sites not meeting the standard.

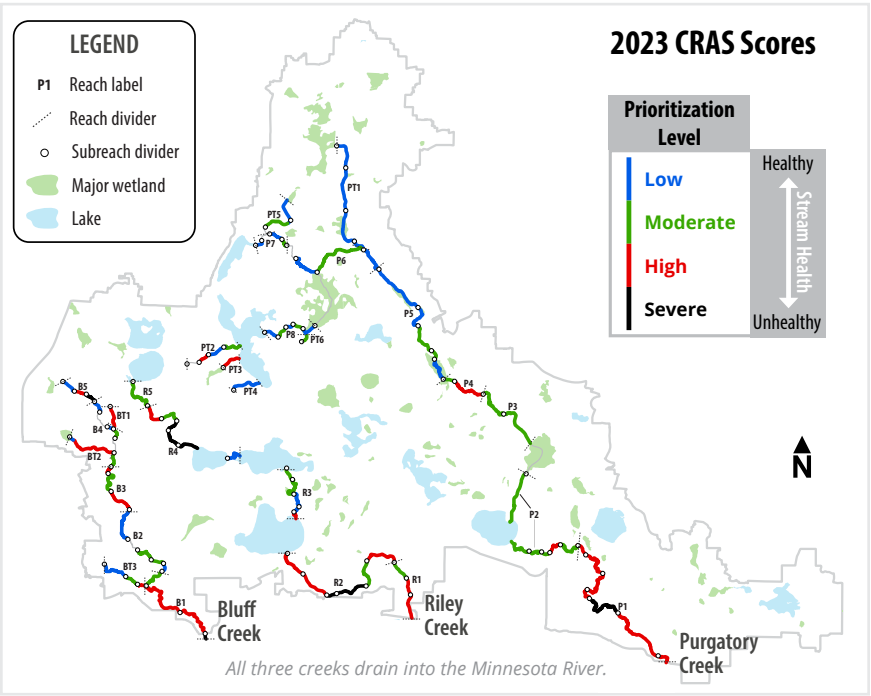


CRAS Scores for Stream Restoration Planning

The District developed the Creek Restoration Action Strategy (CRAS) to prioritize creek reaches, sub-reaches, or sites, in need of stabilization and/or restoration. The District identified eight categories of importance for project prioritization:

- Infrastructure risk
- Erosion and channel stability
- Public education
- Ecological benefits
- Water quality
- Project cost
- Partnerships
- Watershed benefits

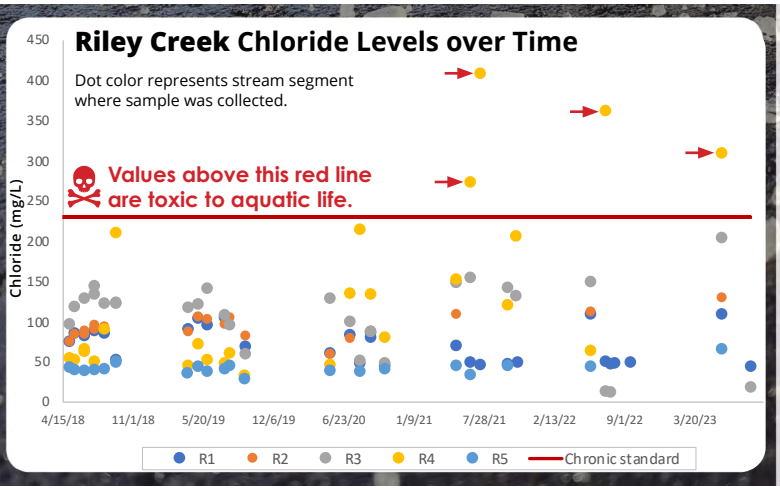
These categories were scored using methods developed for each category based on a combination of published studies and reports, erosion inventories, field visits, and scoring sheets from specific methodologies. Final tallies of scores for each category, using a two-tiered ranking system, were used to prioritize sites for restoration/ remediation.



All three creeks drain into the Minnesota River.

Chloride: A Growing Concern

Chloride permanently pollutes our lakes, ponds, and streams. Winter de-icers, water softeners, and fertilizers all contribute to chloride pollution.



What can I use instead of winter de-icers?

All affordable & effective residential de-icing products contain chloride, even those labeled as "eco-friendly" or "pet safe."

Focus instead on reducing build up of ice on your property:

- **Shovel early & often**
- **Prevent ice formation, avoid driving or walking on snow**
- **Pile snow where it won't melt & refreeze on walkways**

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