

Riley Creek

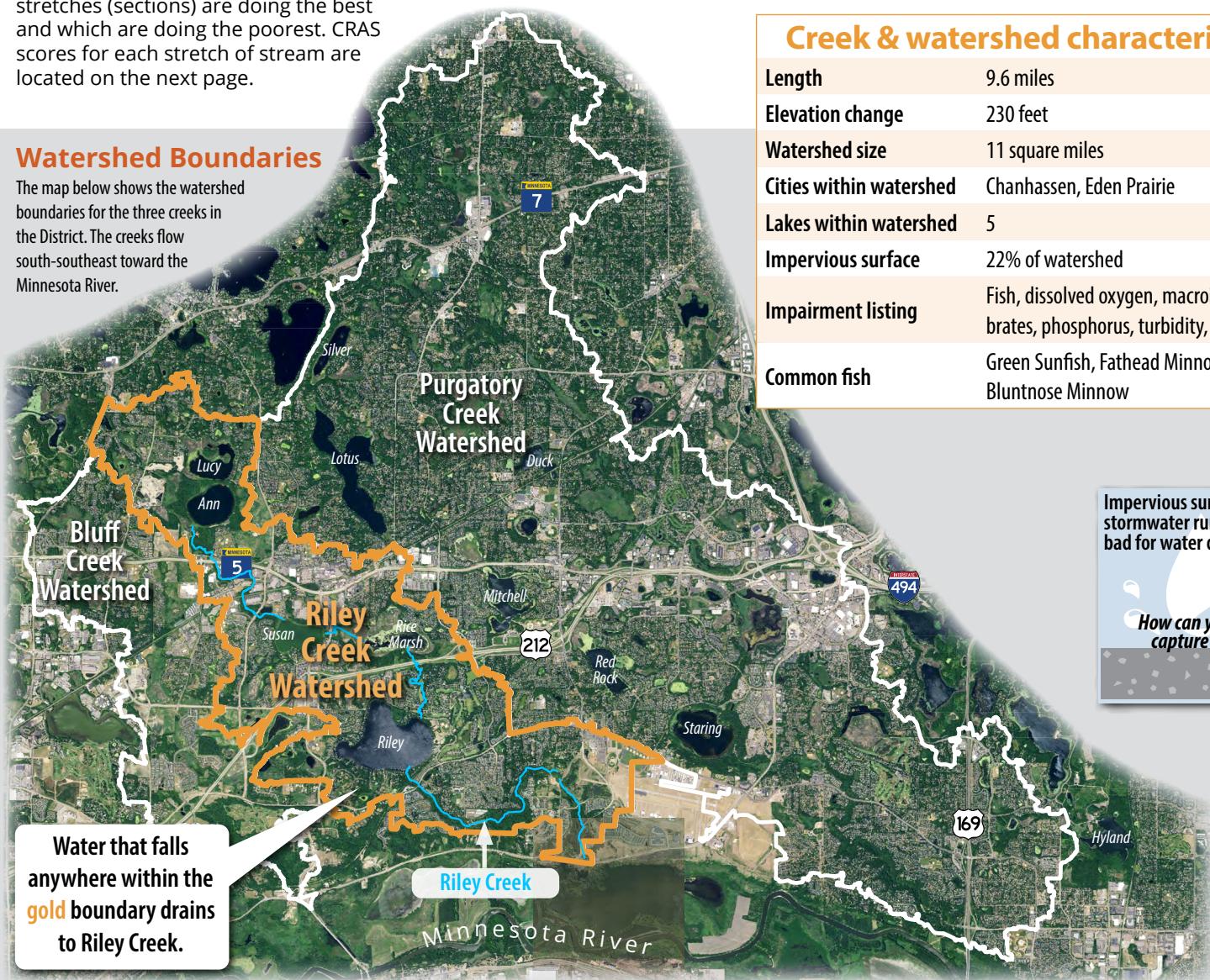
Riley Creek begins at lakes Lucy and Ann in Chanhassen and flows through three lakes - Susan, Riley, and Rice Marsh - before descending to the Minnesota River Valley. The creek has mild topography in its upper and middle watershed, but below Lake Riley the banks become steep.

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 been monitoring 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.

Watershed Boundaries

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



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.

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

Impervious surfaces create stormwater runoff, which is bad for water quality.

How can you reduce or capture your runoff?



2022 Stream Monitoring Results

Stream Water Quality Monitoring

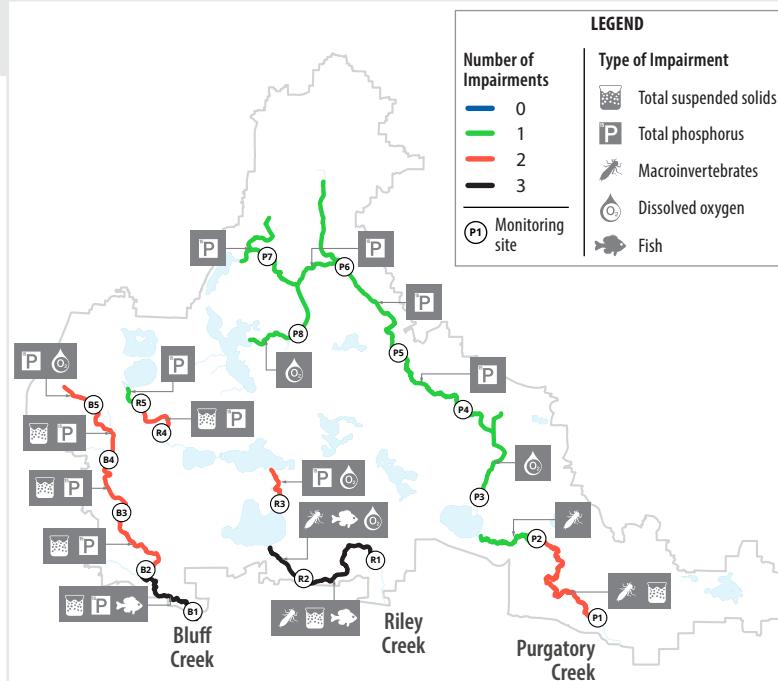
In 2022, District staff collected and analyzed water samples every two weeks — April through September — to determine the average water quality of Bluff, Riley, and Purgatory creeks.

The District monitors streams for six impairment categories, which are defined by the Minnesota Pollution Control Agency (MPCA). When a measured value does not meet the standard set by the MPCA, the stream is designated as "impaired" in that category.

In 2022, drought significantly impacted the streams. Of 18 regular sampling sites, 11 went dry or became stagnant at some point. From 2021 to 2022, stream water quality remained relatively the same across the district. Excluding the dissolved oxygen impairment, the number of water quality standard impairments increased slightly from 2021 to 2022. Similar to previous years, total phosphorus was the water quality standard causing the most impairments in 2022 with 12 of 18 sites not meeting the standard.

Number of impairments in each stream over the last two years.

Stream name	2020	2021	2022
Bluff Creek	10	9	11
Riley Creek	6	11	11
Purgatory Creek	11	9	9



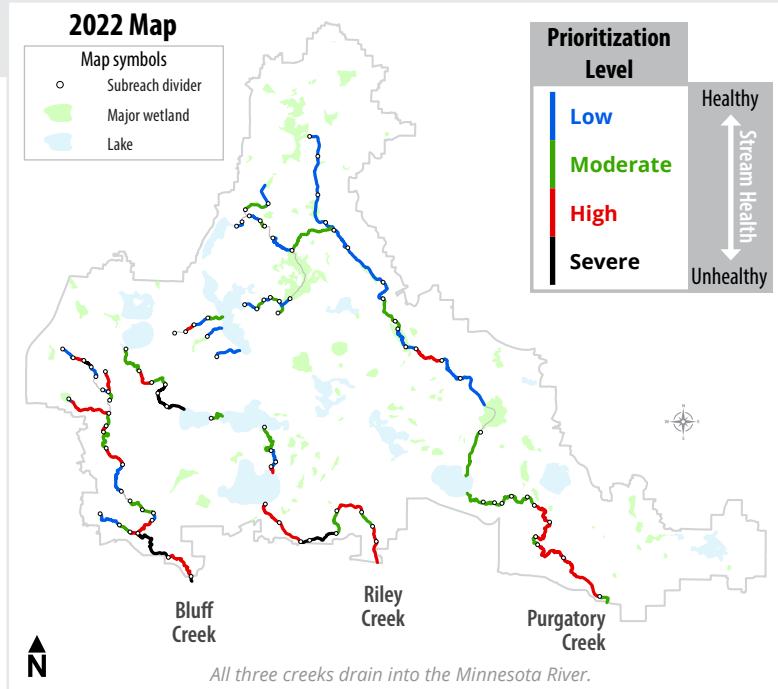
Monitoring sites are labeled with a letter and number. The letter represents the name of the creek (e.g. "P" for Purgatory). Numbering begins at the most downstream site.

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. More information on CRAS can be found on the District website rpbcwd.org.



All three creeks drain into the Minnesota River.

Learn more in the **Water Resources Report**
rpbcwd.org/annualreport



Grants for Streambank Restoration
The watershed district offers up to **75% cost share** assistance for restoring your streambank! Learn more:
rpbcwd.org/grants



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As the creeks approach the Minnesota River to the south, the land grows steeper and more vulnerable to erosion, which is why you see more red and black near the bottom of the map. The District is working with its partners to conduct restoration projects in these lower stretches of the creeks to protect water quality here and downstream.