Biomonitoring

Description

Biological monitoring was conducted with the purpose to assess stream quality while providing an environmental educational service to the community. Under the supervision of ACD staff, high school science classes collect aquatic macroinvertebrates from a specific section of stream, identify the macroinvertebrates down to the family level, and use the biotic index to score overall water and habitat quality. These methods are based upon the knowledge that different families of macroinvertebrates have different water and habitat quality requirements. The families collectively known as EPT (Ephemeroptera, or mayflies; Plecoptera, or stoneflies; and Trichoptera, or caddisflies) are generally pollution intolerant, while other families can thrive in low quality water. Therefore, a census of stream macroinvertebrates provides important information regarding overall stream health.

Locations

Rum River

- St. Francis High School
- Anoka High School

Clearwater Creek

- Forest Lake Community Learning Center

Sand Creek

- Blaine High School

Rice Creek

- Totino Grace High School

Monitoring Schedule

Spring / Fall

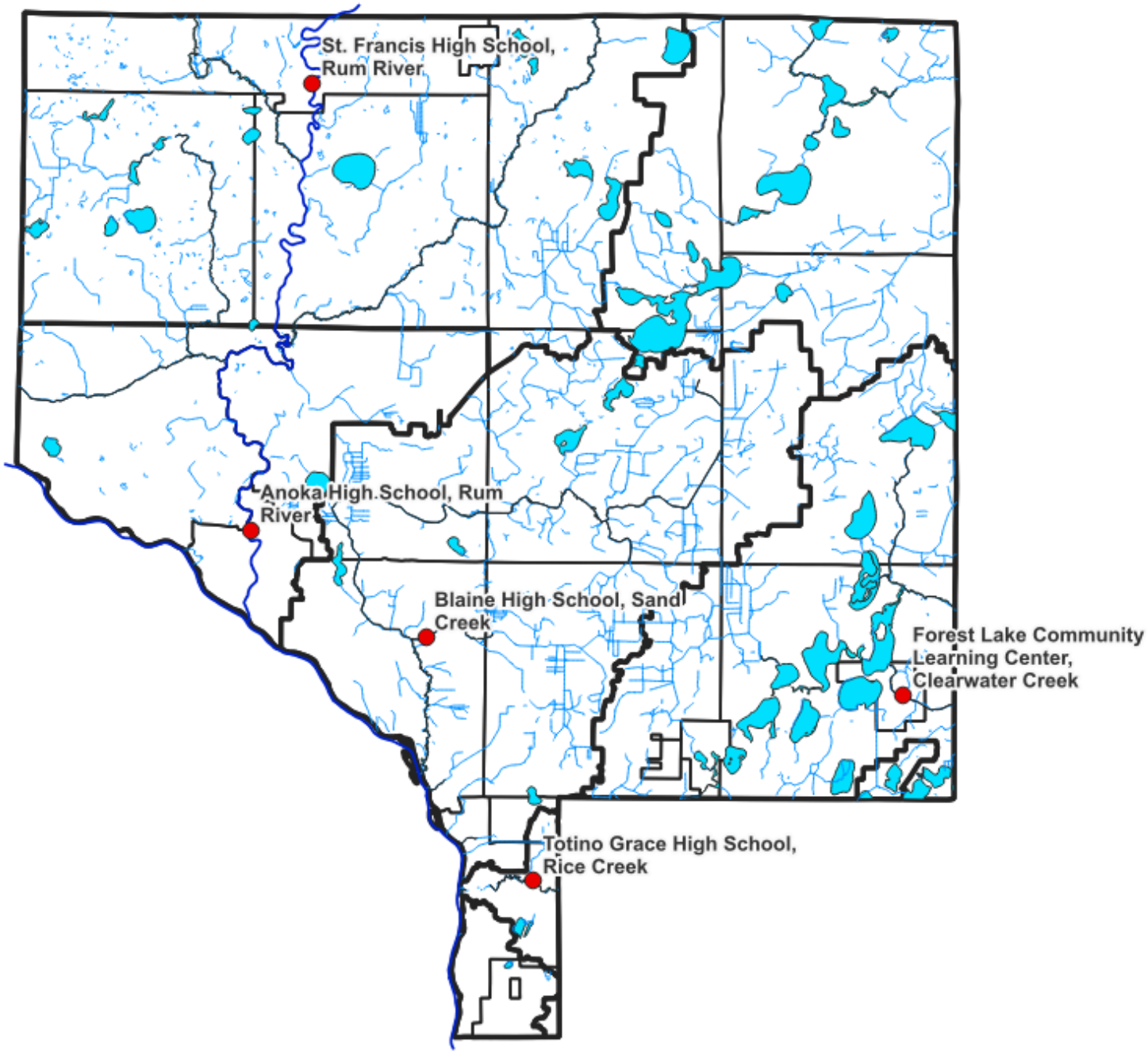
Parameters

- Number of invertebrate families
- EPT
- FBI

ANOKA CONSERVATION DISTRICT

Biomonitoring Map

Below is a map of lakes in Anoka County that were monitored in 2024.



St. Francis High School

2024 Biomonitoring Summary

UPPER RUM RIVER
Watershed Management Organization

Background

The Rum River originates from Lake Mille Lacs, and flows south through western Anoka County where it joins the Mississippi River in the City of Anoka. Other than the Mississippi, the Rum River is the largest river in the county. In Anoka County, the river has both rocky riffles as well as pools and runs with sandy bottoms. The river's condition is generally regarded as excellent. Large portions of the Rum River in Anoka County have a State "scenic and recreational river" designation.

The sampling site is in Rum River North County Park, in St. Francis. This site is typical of the Rum in Northern Anoka County, having a rocky bottom with numerous pool and riffle areas.

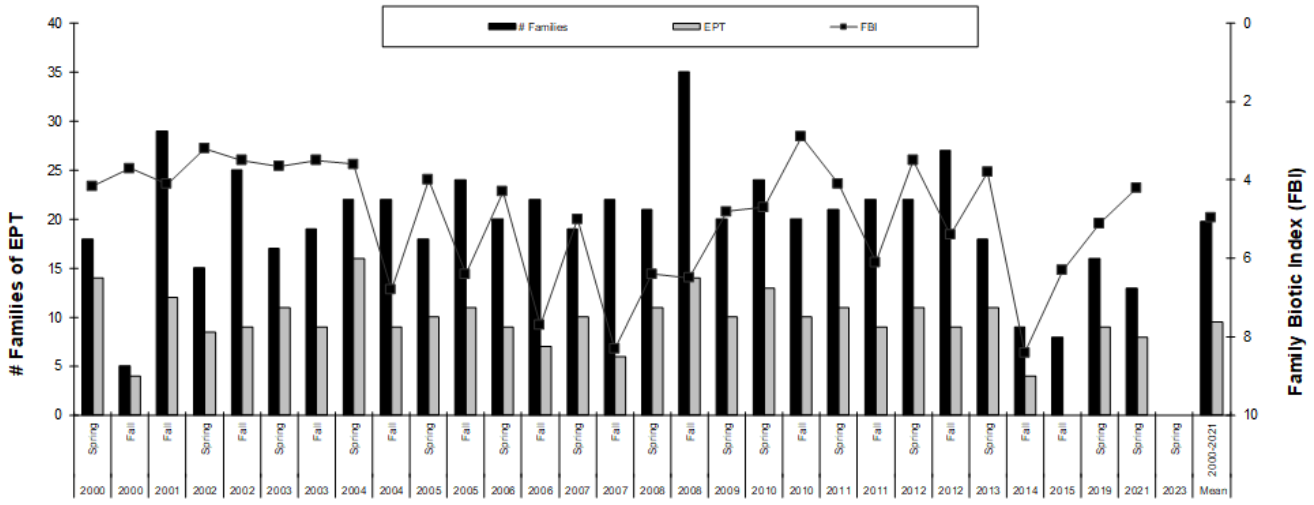
Discussion

All students who participated in 2024 sampling were part of sophomore biology courses. All specimens were identified to the best of the students' abilities for a rapid assessment in the field and then returned to the river. As a result, no preserved samples are available for ACD identification and inclusion in the Water Almanac.

Historically, both chemical and biological monitoring indicate the good water quality of this river. Poorer results in 2014 and 2015 may reflect varying site and sampling conditions rather than a shift in the biological community. Habitat is ideal for a variety of stream life, and includes a variety of substrates, plenty of woody snags, riffles, and pools. Taxa that are extremely sensitive to pollution are still being found. Water chemistry monitoring done at various locations on the Rum River throughout Anoka County indicates that water quality is also good. Continued biological monitoring is recommended both as an education program and for long-term ecological condition monitoring.

St. Francis High School - Summarized Results

MN DNR's LakeFinder is an online tool that finds and displays detailed information about most lakes in Minnesota. Information available includes fishing regulations; location; water access sites; lake maps; lake reports on stocking; ice in/out and water quality; fish consumption; and aquatic plant surveys.



Year	2013	2014	2015	2019	2021	Mean
Season	Spring	Fall	Fall	Spring	Spring	2000-2021
FBI	3.8	8.4	6.3	5.1	4.2	5.0
# Families	18	9	8	16	13	19.8
EPT	11	4	0	9	8	9.5
Date	20-May	24-Oct	22-Jul	19-May	26-May	
Sampled By	SFHS	SFHS	4-H	SFHS	SFHS	
Sampling Method	MH	MH	MH	MH	MH	
Mean #Individuals/Rep.	247.5	219	23	139		
# Replicates	2	1	1	1		
Dominant Family	Baetiscida	Corixidae	Cambaridae	Siphlonuridae		
%Dominant Family	34.7	86.3	34.8	32.4		
%Ephemeroptera	54.1	3.7	0	46		
%Trichoptera	6.3	0.5	0.0	0		
%Plecoptera	30.3	2.3	0	18		

Anoka High School

2024 Biomonitoring Summary

Lower Rum River WMO

Background

The Rum River originates from Lake Mille Lacs, and flows south through western Anoka County where it joins the Mississippi River in the City of Anoka. Other than the Mississippi, the Rum River is the largest river in the county. In Anoka County, the river has both rocky riffles as well as pools and runs with sandy bottoms. The river's condition is generally regarded as excellent. Large portions of the Rum River in Anoka County have a State "scenic and recreational river" designation.

The sampling site is in Rum River North County Park, in St. Francis. This site is typical of the Rum in Northern Anoka County, having a rocky bottom with numerous pool and riffle areas.

Discussion

All students who participated in 2024 sampling were part of sophomore biology courses. All specimens were identified to the best of the students' abilities for a rapid assessment in the field and then returned to the river. As a result, no preserved samples are available for ACD identification and inclusion in the Water Almanac.

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Forest Lake Area Learning Center

2024 Biomonitoring Summary

RCWD
RICE CREEK WATERSHED DISTRICT

Background

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Blaine High School

2024 Biomonitoring Summary

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RICE CREEK WATERSHED DISTRICT

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Totino Grace High School

2024 Biomonitoring Summary

Background

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Partner Appreciation

The Anoka Conservation District would like to thank our volunteers for all their great work during the 2024 monitoring season. State-wide data networks are made up of thousands of dedicated volunteers and provide some of the oldest and most reliable data in the state. These historical data sets are crucial for accurate trend analysis and assist in making informed management decisions. The data provided by volunteers helps verify lake levels, provides critical information during flooding events, monitors drought conditions, and provides needed guidance on Minnesota's changing climate. Some of ACD's volunteers have been long time participants and have contributed data for over 15+ years.

Additional water quality monitoring information can be found on the Anoka Conservation District Water Almanac :

https://www.anokaswcd.org/water-almanac.html

ANOKA CONSERVATION DISTRICT