

# UPPER SUGAR RIVER WATERSHED ASSOCIATION



We envision a community that is inspired to take collective action to ensure a healthy watershed for all, now and in the future.



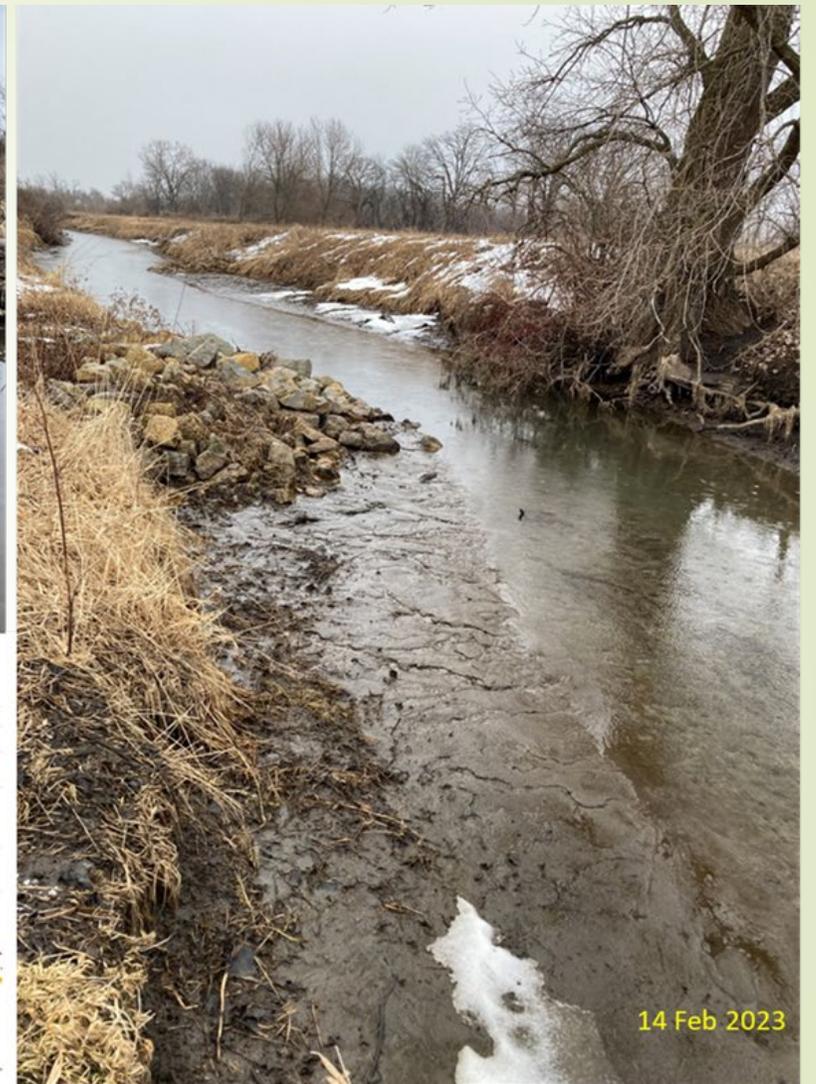
# **Badger Mill Creek: Potential Impacts of Flow Reduction**

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# Potential Risks

- Detrimentially low flow during drought conditions
- Effects on resiliency and the ability for stream to adapt to climate change and other uncertainties
- Shoreline erosion and harm to habitat restoration and recent infrastructure improvements
- Increased sediment loading
- Impacts to groundwater recharge

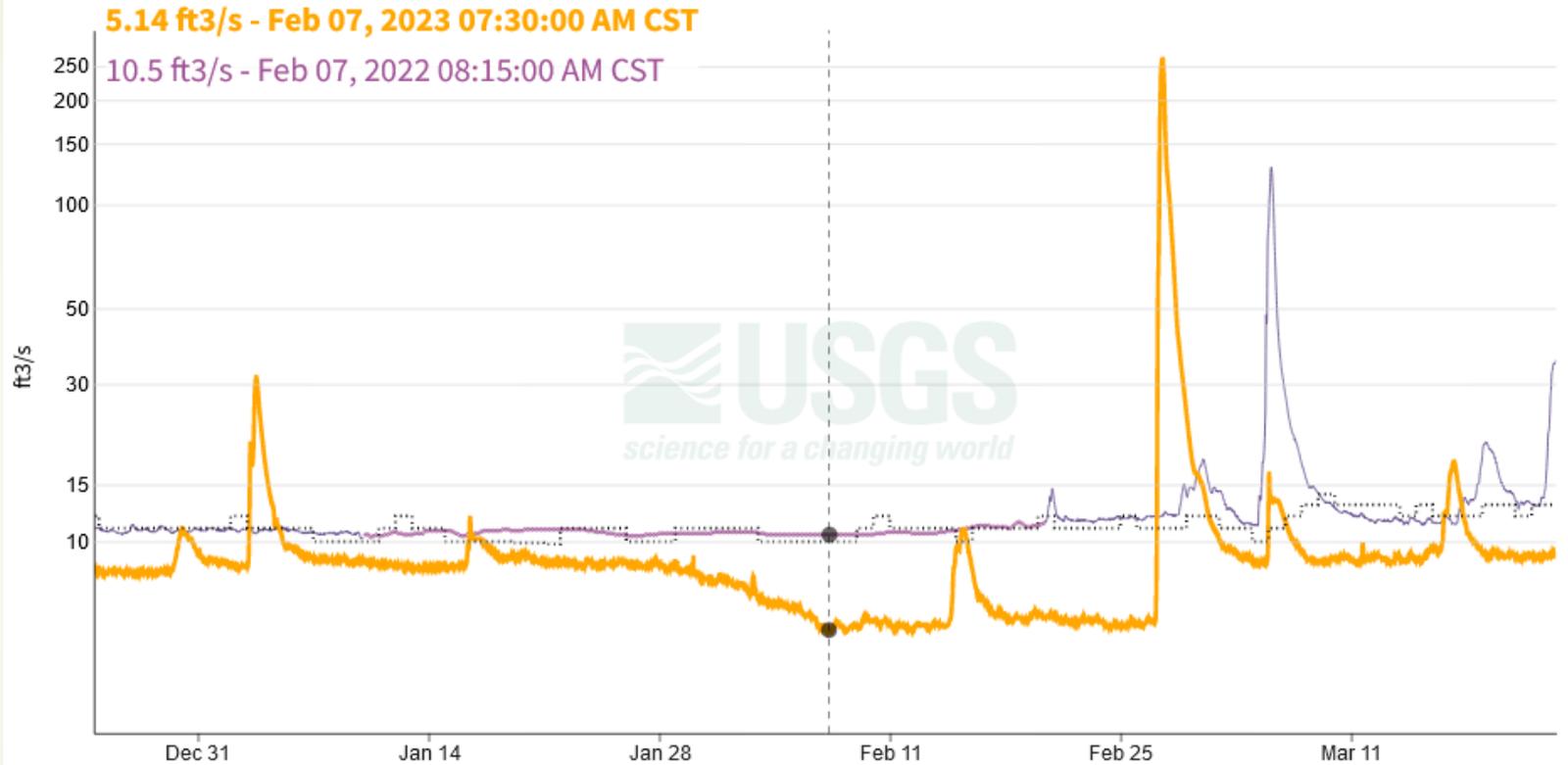


**Photos and streamflow data (Bruce St.) of Badger Mill Creek in Verona from 14 Feb 2023 when discharge of MMSD effluent was shut off. Note the low water level with recently installed instream habitat structures completely above the water line. Flow rate on the 14<sup>th</sup> (yellow) was 50% of median flow (dotted line) and flow for the same time in 2022 (purple). Transient peaks in the 2023 tracing represent precipitation events.**

# Badger Mill Creek at Verona, WI - 05435943

December 24, 2022 - March 23, 2023

Streamflow, ft<sup>3</sup>/s ⓘ

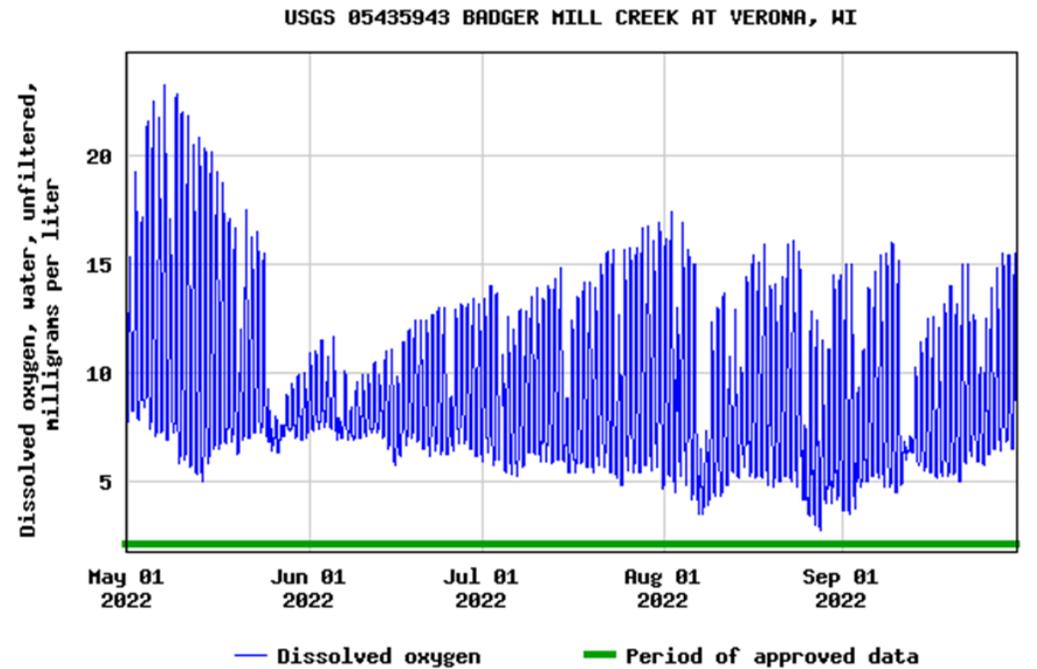
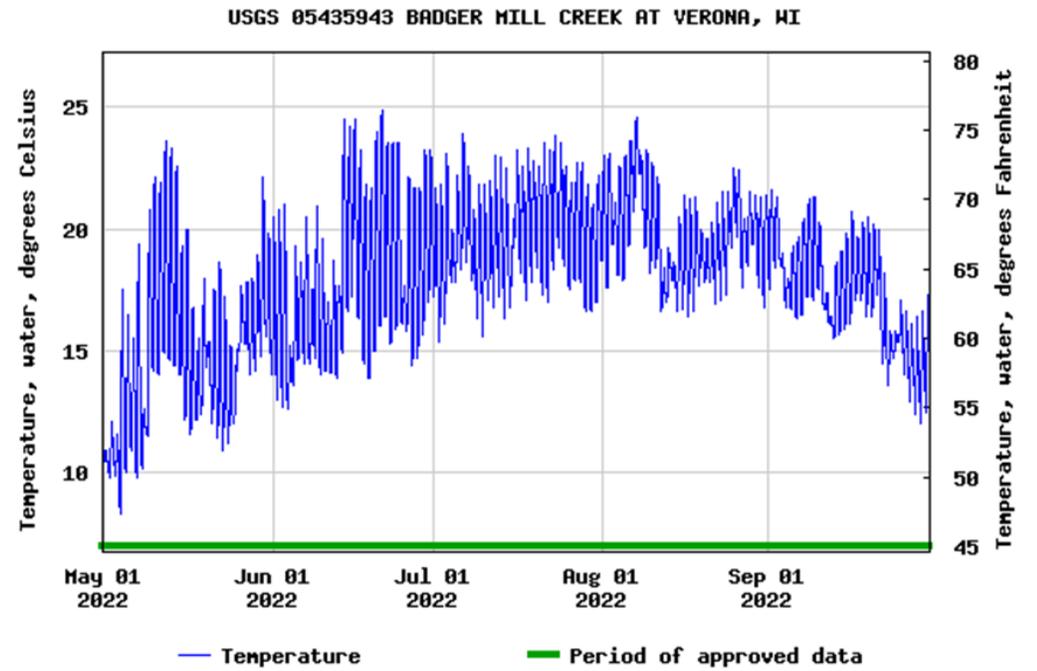
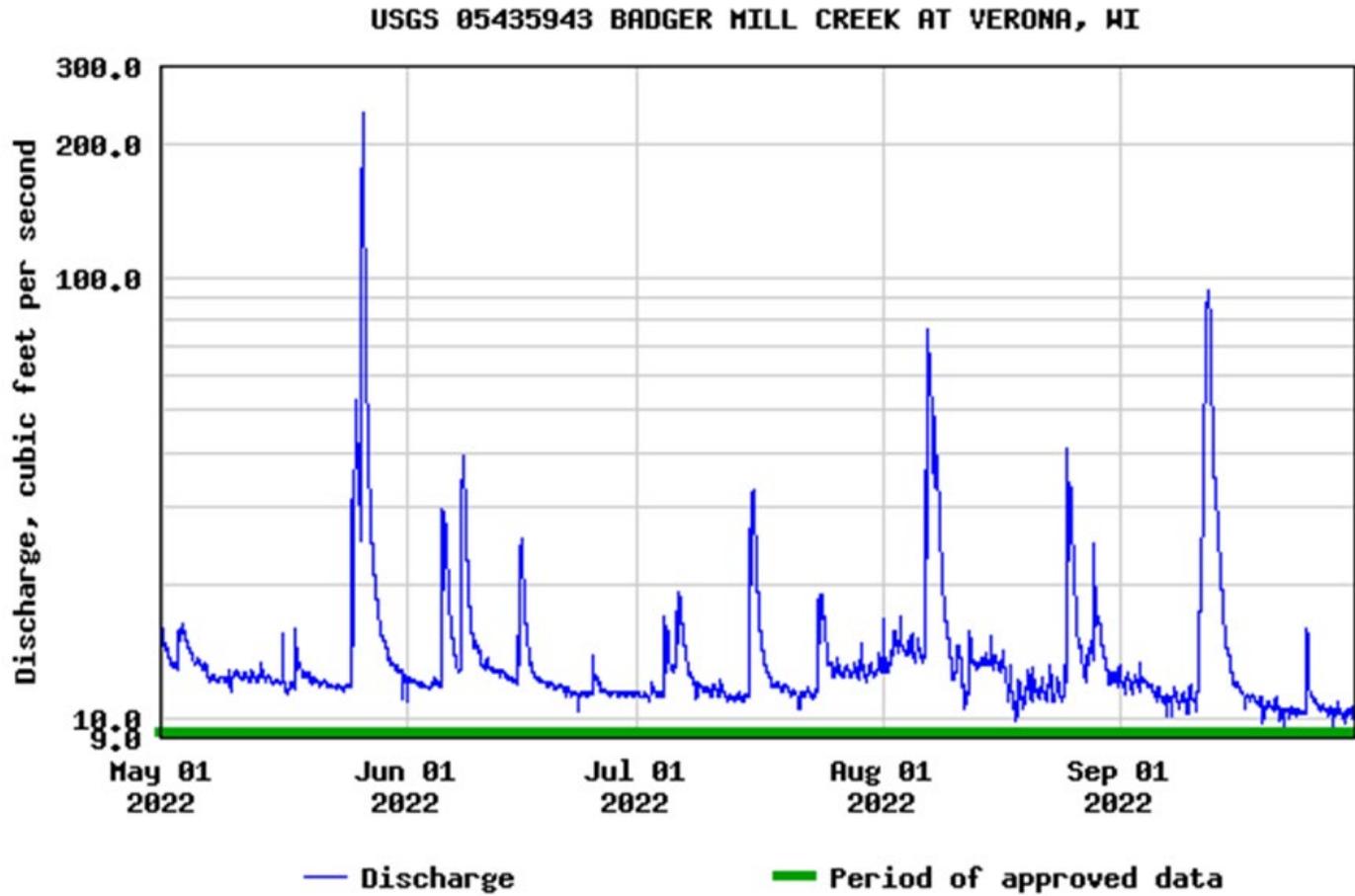


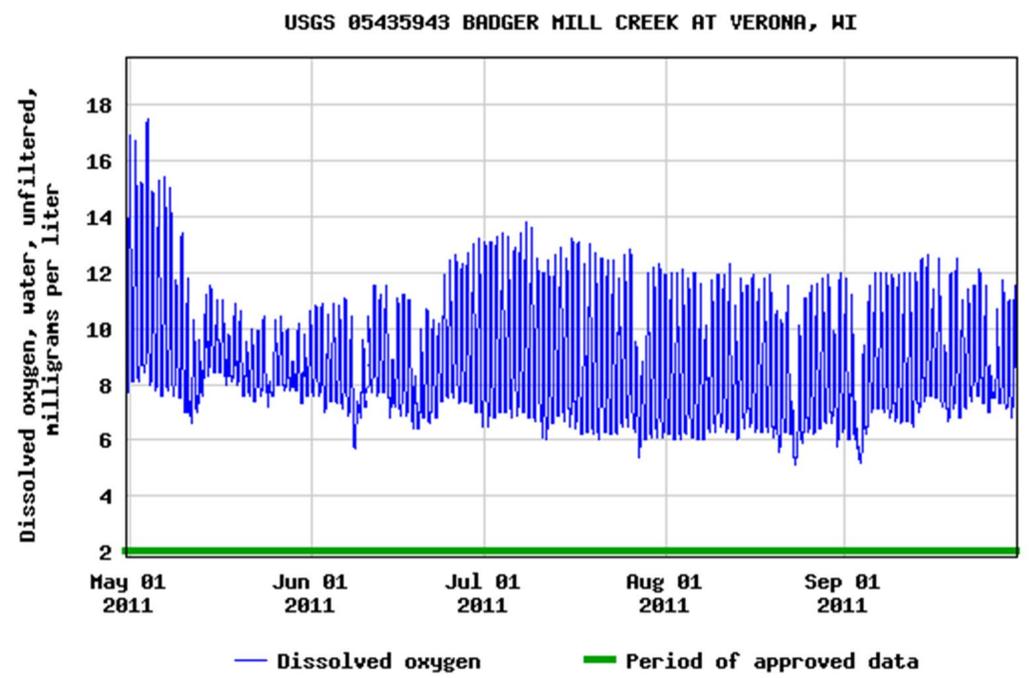
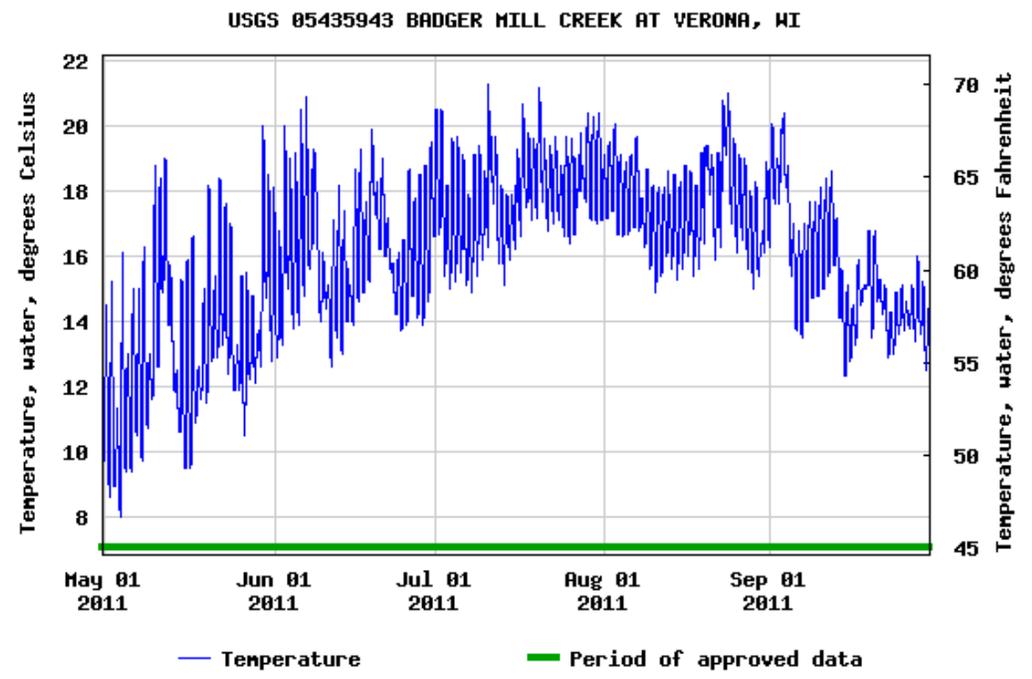
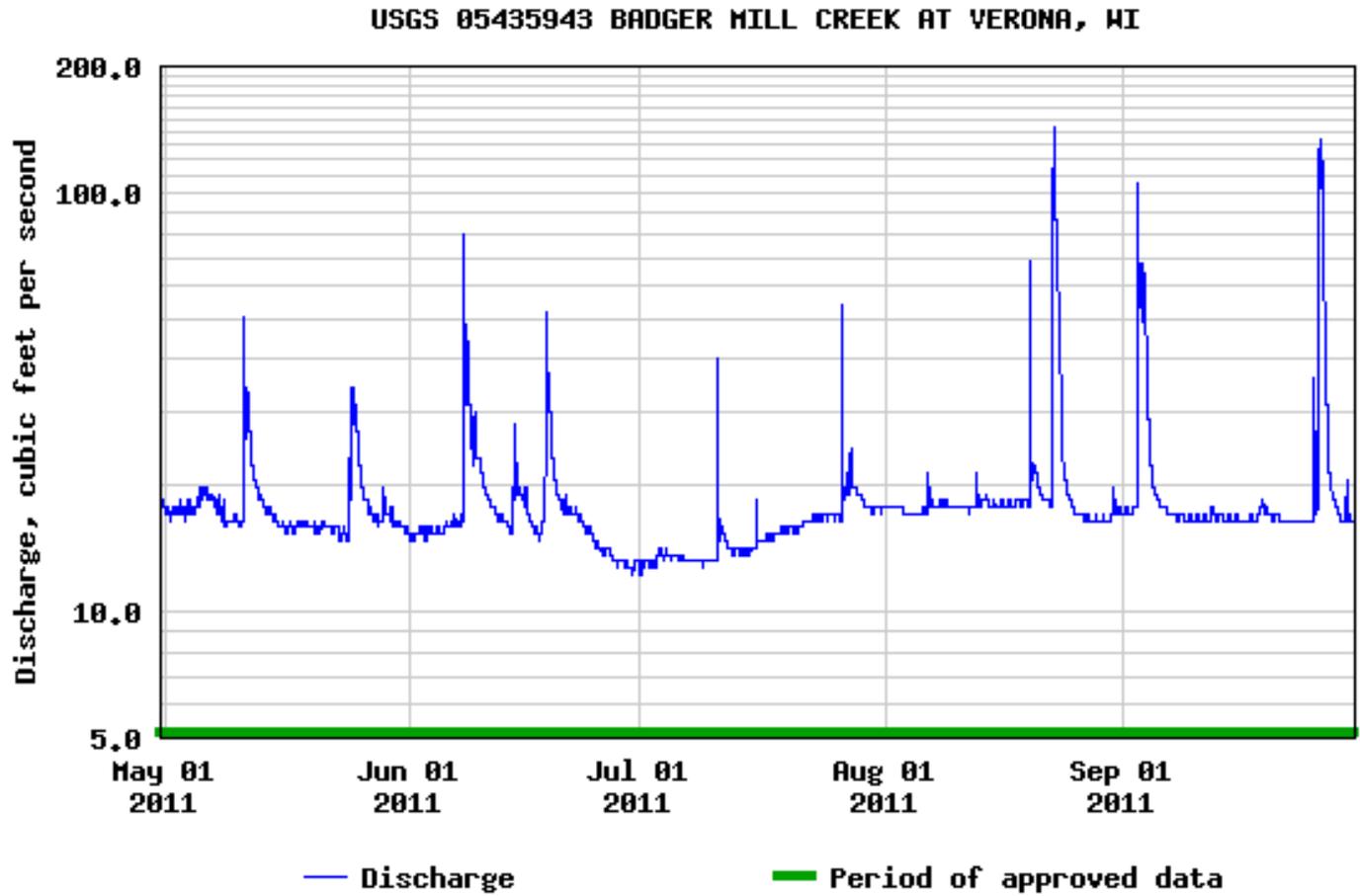
Current: — Approved — Provisional — Estimated  
 Last year: — Approved — Estimated  
 Median: ..... 1997 - 2022

Statistics for Thursday, March 23, 2023 based on 26 years of data

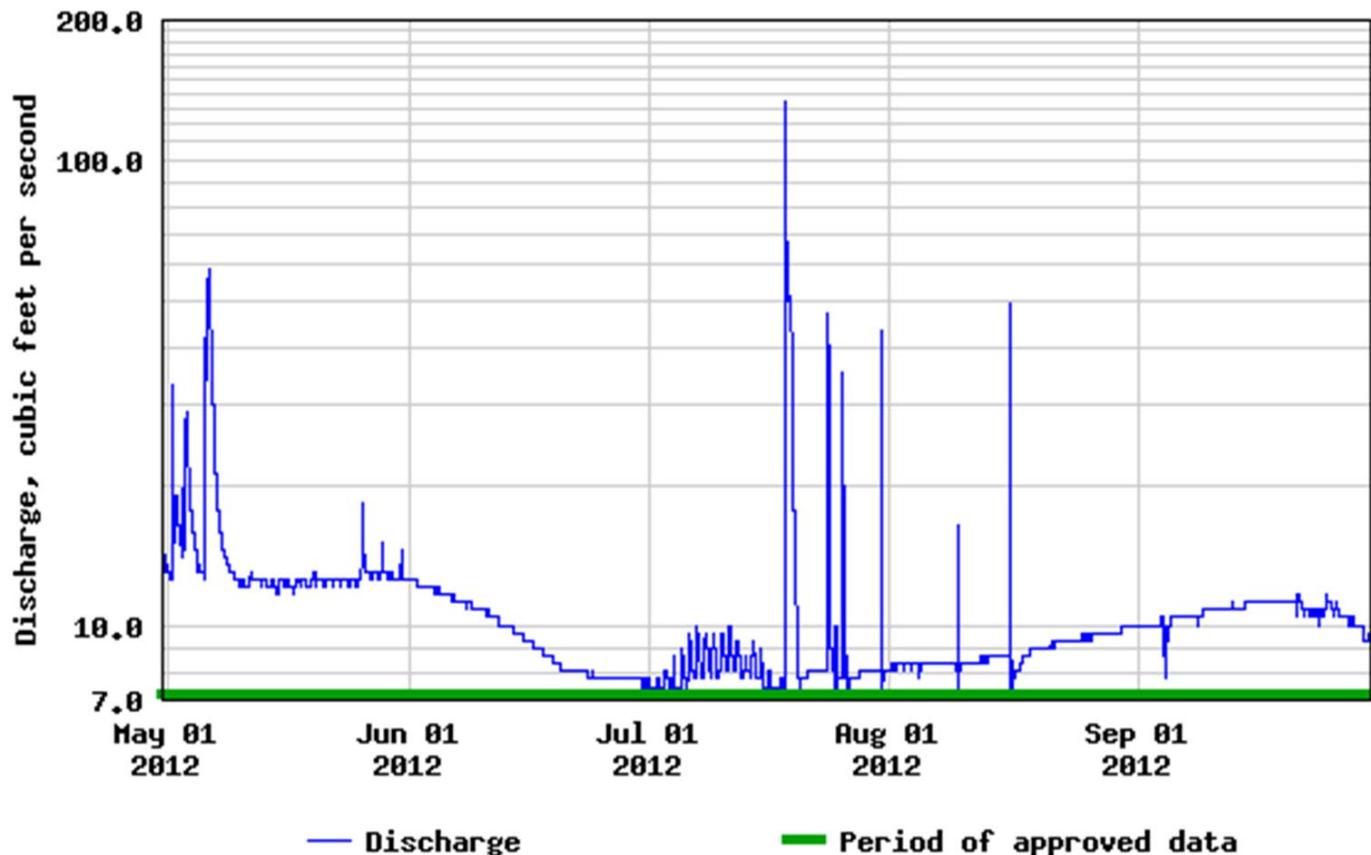
Streamflow, ft<sup>3</sup>/s

low (1998)	25th percentile	median	75th percentile	mean	high (2011)
5.5	8.2	13	17	15	47.7

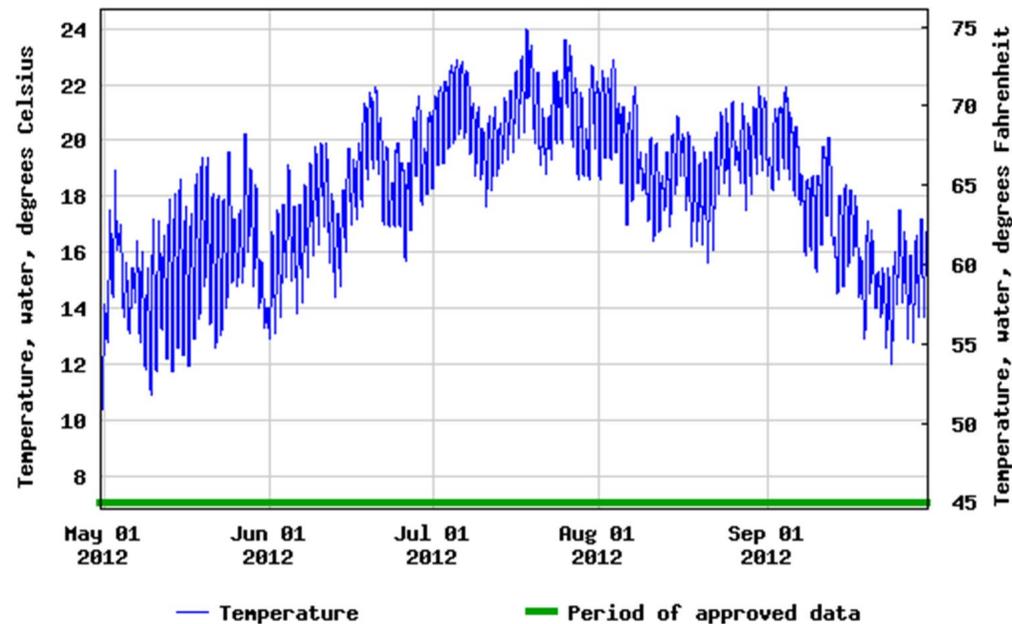




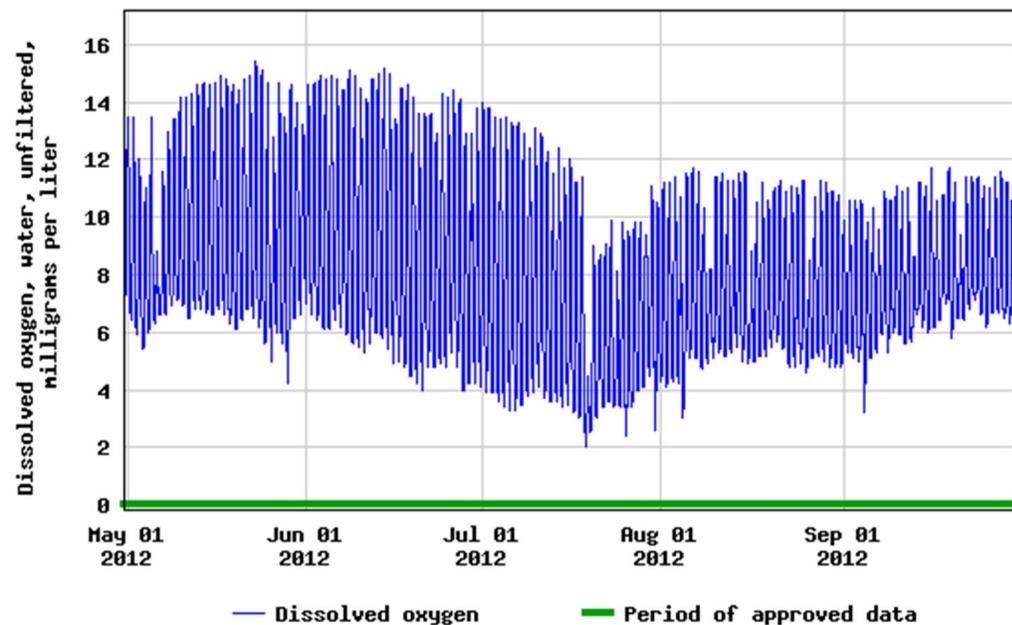
USGS 05435943 BADGER MILL CREEK AT VERONA, MI



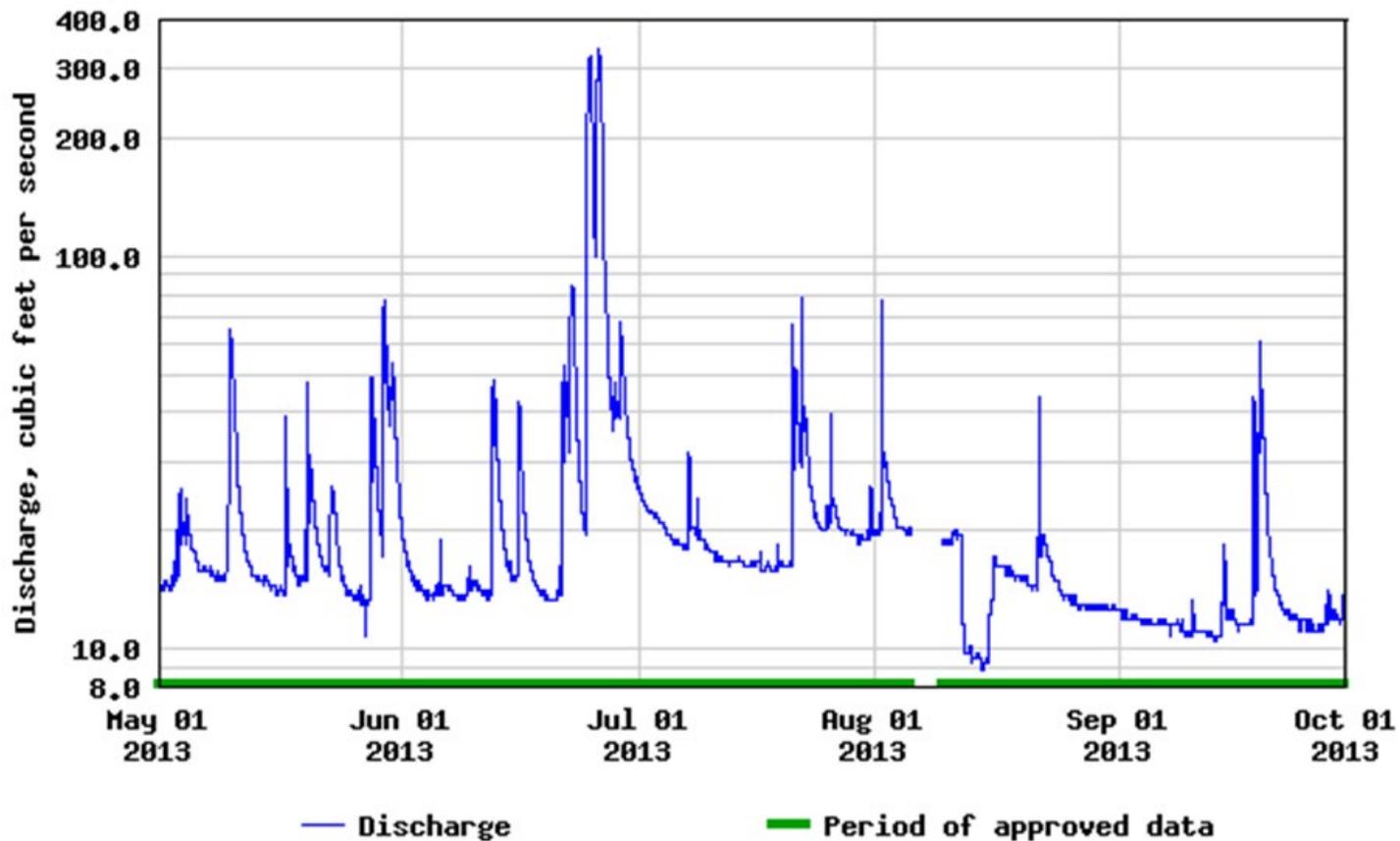
USGS 05435943 BADGER MILL CREEK AT VERONA, MI



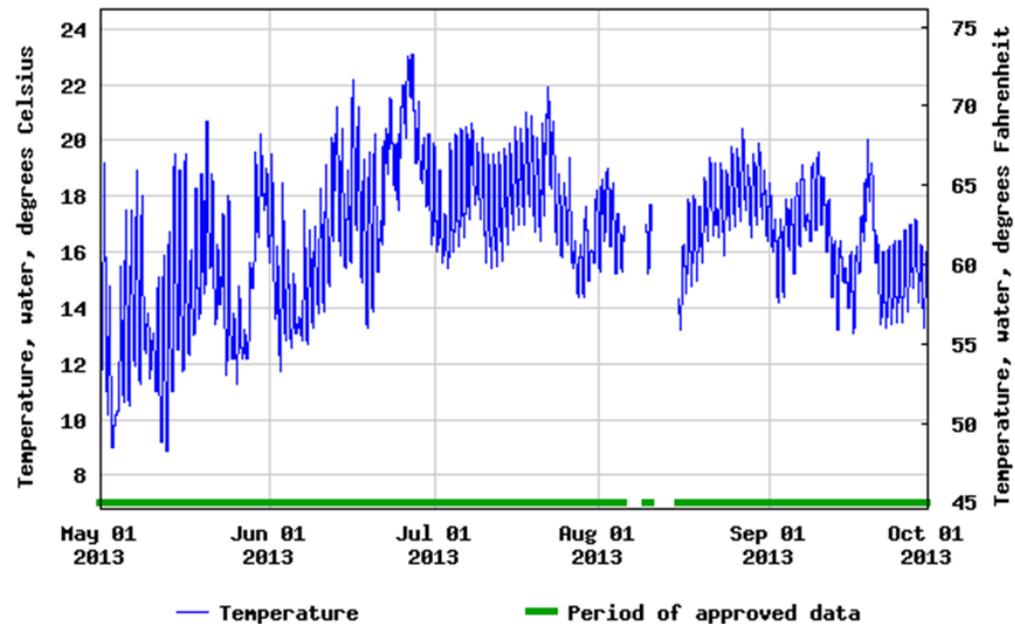
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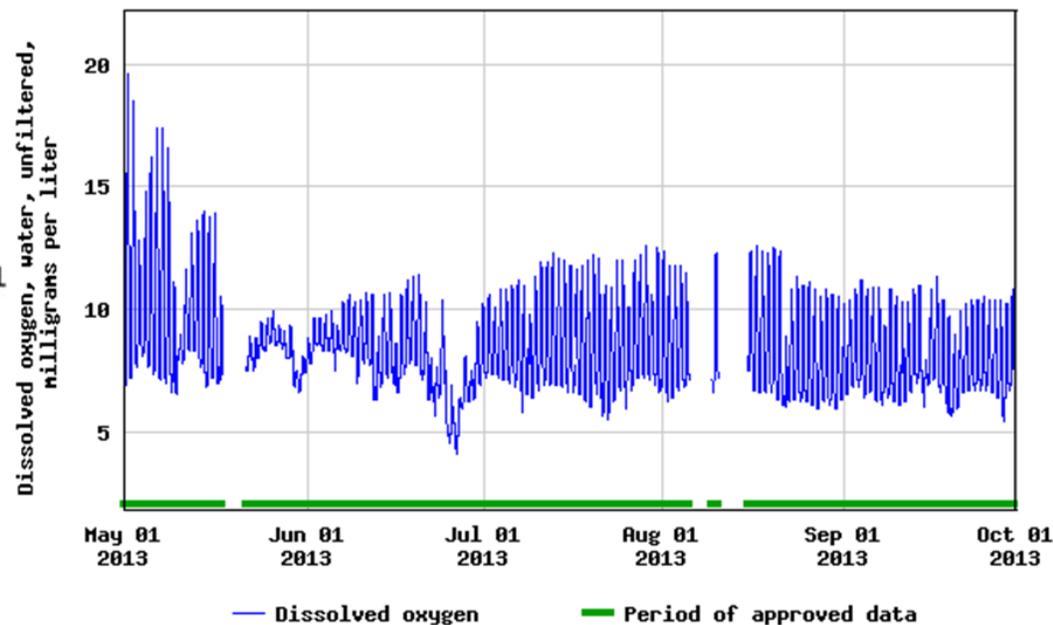
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# Bottom Line

- More information and a longer study period is required to determine what the impacts of a 30-50% reduction in flow would be
  - DNR staff recommend a 2-year study looking at different scenarios and time periods to understand true impacts; models of climate scenarios are readily available through DNR
  - Difficult to weigh the risks and potential loss without more data to inform a comprehensive assessment of triple bottom line
- Upper Sugar, Trout Unlimited, City of Verona, concerned citizens and other stakeholders are strong partners and a resource to support further study as well as contribute to implementation of alternative solutions