

State of the Gallatin River 2021



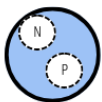
2021 marked the fourth year of intensive testing on the Gallatin River and its tributaries by the Gallatin River Task Force and the Montana Department of Environmental Quality to better understand the cause of widespread nuisance algae blooms in 2018 and 2020.

What our tests showed in 2021:

Water Quality Indicator	Status
Algae	Good except in the Taylor Fork
Nutrients	Good except in the West Fork
Water temperature	Concerning
Streamflow	Concerning



Widespread nuisance **algae** blooms did not occur in 2021 in the Gallatin River or its tributaries except for the Taylor Fork. Excess algae can deplete rivers of oxygen vital for aquatic life and the human recreation experience, as well as alter aquatic insect habitats and biodiversity. Preliminary findings after four years of testing suggest that algae blooms on the Gallatin have been caused by a mixture of sufficient nutrients, warm water temperatures, low streamflow, and an abundance of sunlight. 2021 was the first year that sunlight was analyzed. Sunlight was higher in 2018 and 2020, the years of widespread algae blooms, compared to 2019 and 2021.



The primary **nutrients** required for algae growth are nitrogen and phosphorus. Except for the West Fork, both nutrients generally stayed below levels of concern. Experiments indicated that algae growth in the mainstem Gallatin was limited by lower nitrogen levels in the water; meaning, more nitrogen was needed to increase algae growth in 2021.

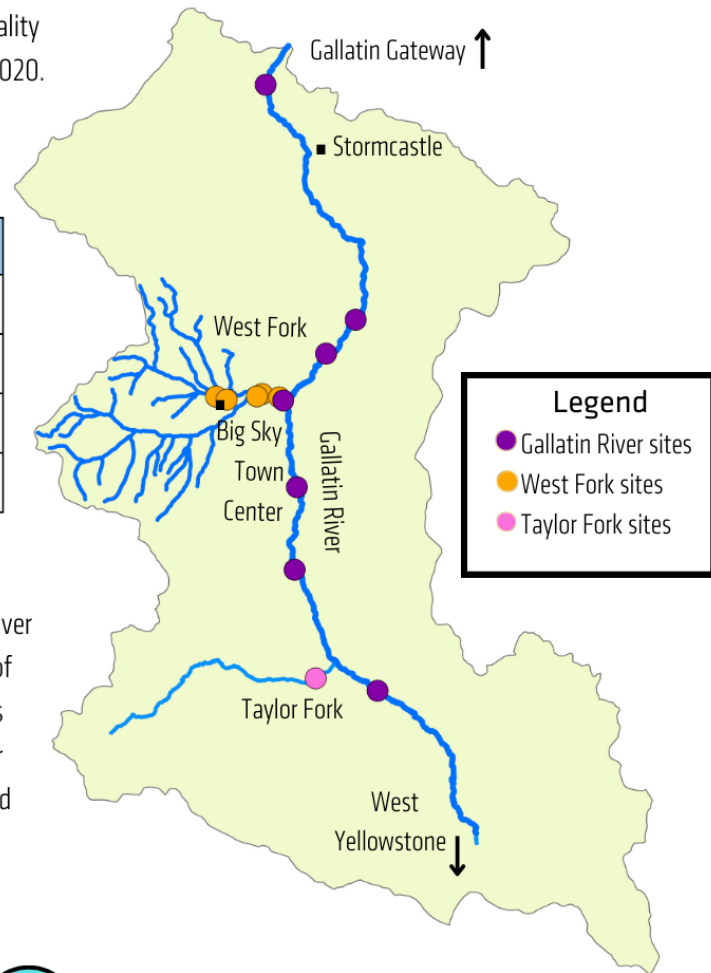


Streamflows were well below historic averages in 2021. Low streamflow allows water to be easily influenced by warm air temperatures and more direct sunlight to reach the streambed.



In 2021, **Water temperatures** were some of the highest ever recorded. By July, water temperatures at all monitoring sites were within the growing range for algae. Warm water creates ideal growing conditions for algae and adds stress on local fish populations.

Map of Monitoring Sites



What is being done to address excess algae in the Gallatin?

The Gallatin River Task Force is a non-profit with a vision of a healthy Gallatin River Watershed for future generations. We are working on numerous projects to address nuisance algae growth in the Gallatin that include stream restoration, advocacy for state and federal protection, and local land and water management. For more details please contact us at 406-993-2519 or headwaters@gallatinrivertaskforce.org, visit our website, www.gallatinrivertaskforce.org, or follow us on social media.

