

Morris Water Story

The Western Minnesota landscape (and our groundwater resources) were formed during the last glaciation which ended around 10,000 years ago.

Morris is in the Pomme de Terre River Watershed in the **Minnesota River Basin** - all of our water flows south to the Minnesota River where it joins with the Mississippi and heads to the Gulf of Mexico.



Pomme de Terre River

- High levels of nitrates and nitrites. Seventy four percent (74%) of land in this region is used for agricultural purposes. Pesticides and fertilizers run off farm fields and leading to high nutrients water systems which creates environmental and public health concerns.
- Limited Buffer Zones. In many areas cropland used to extend right to the edge of the Pomme de Terre River or wetlands. This minimizes the natural resistance to flooding and the natural filters for sediment, pesticides and nutrients. This also reduces the habitat needed for many wetland species. Without native prairies plants extending their long roots into the soil this also leads to an unstable and rapidly changing river channel which is prone to erosion. Concern for these issues lead to a Minnesota-wide law was passed in 2015, called the MN Buffer Law, which requires farmers to leave strips of perennial vegetation between fields and wetlands.
- Connectivity issues. The dam at the southern end of Pomme de Terre Park eliminates the ability of wetland organisms that live south of the dam to move north - this is particularly impactful to 14 migratory fish species.
- Low levels of dissolved oxygen, non-point phosphorus pollution and coliform bacteria are also concerns. In general, the Pomme de Terre River south of Morris faces more problems than the river does north of Morris.



Crystal Lake

There has not been enough data collected to make firm conclusions but data collected suggests that it will not meet water quality standards. High levels of phosphorus and high total dissolved solids are a few of the suspected issues.

Drinking water

Source: Morris water (for drinking, washing, irrigation) is groundwater. It is pumped up from beneath the ground surface from the Pomme de Terre Aquifer.

Problems: The bedrock in Morris is largely limestone which is made of calcium and magnesium carbonates. Hard water a term used to describe water that has a lot of carbonates in it. This is why (if you have unsoftened water) white rings form around faucets or hoses and soap doesn't get as sudsy as it does in water that is less hard.

Usage: Everyone in the city of Morris uses a total of 700,000 gallons per day.

The New Water Treatment Plant!

Hard water, while safe to drink, can be hard on appliances and softening water is common practice in many homes. Water is softened by running it through salts, which the carbonates bond with, instead of staying in the water. However, some of the chloride ions from the salts stay in the water which can cause damage to rivers and wetlands, and the organisms that reside in them, when that water is released. Chloride pollution levels in Morris (due to many individual water softeners) were above the water quality standards and no longer meeting the MN Pollution Control Agency standards. A new water treatment plant was designed to centrally soften water using lime and soda ash, in an effort to decrease this pollution. The plant was completed in 2019 and cost \$18.3 million.

Who Monitors Our Water?

The MN Pollution Control Agency and Pomme de Terre River Watershed Association do for official purposes but students and citizens of all ages can keep an eye on their drinking water quality and health of wetlands near them.

More Information:

Pomme de Terre River Association: <https://www.pdtriver.org>

Minnesota Pollution Control Agency watershed reports:

<https://www.pca.state.mn.us/water/watersheds/pomme-de-terre-river>

Minnesota River Basin Data Center: <https://mrdbc.mnsu.edu/pomme-de-terre-river-major-watershed>