

Groundwater modeling predicts future changes in the Silurian aquifer

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- The Silurian aquifer is an important source of drinking water in Eastern Iowa, supplying several cities as well as private households, rural communities, and industrial facilities.
- To evaluate future water availability, researchers at the U.S. Geological Survey used a groundwater model to predict how water use from 2025 to 2045 will affect the aquifer. Future demand for water from the Silurian aquifer was estimated based on predicted growth for local cities and other water users.
 - Cities provided estimates of how much their Silurian water use may grow, ranging from no growth in Iowa City to 5 percent per year in Tiffin.
 - Similar increases were assumed for other users of the aquifer.
- The groundwater model predicts between 0 and 13 meters of water-level decline by 2045 across the study area, compared to 2020–2022 water levels.
 - Around major production wells in North Liberty, Tiffin, Coralville, Solon, and West Branch water levels are expected to fall between 4 and 8 meters compared to 2022 levels.
 - Most places without heavy pumping are expected to see less than 1 meter of decline.
- The model is based on the best current understanding of the Silurian aquifer and water usage in Eastern Iowa.
 - There is some uncertainty in these predictions. The model is based on available geologic, hydrologic, and water-use data, which is limited in some areas, and future water use and climate conditions may differ from what was assumed.
 - The model includes only wells that were operating between 2020 and 2022. New wells or changes in pumping amounts could lead to different outcomes.
- Further details about this study can be found in the following report: Bristow, E.L., Gannon, J.M., and Williams, A.M., 2026, Simulation of groundwater flow in the Silurian aquifer, eastern Iowa, 2020–45: U.S. Geological Survey Scientific Investigations Report 2026–5020, 44 p., <https://doi.org/10.3133/sir20265020>.