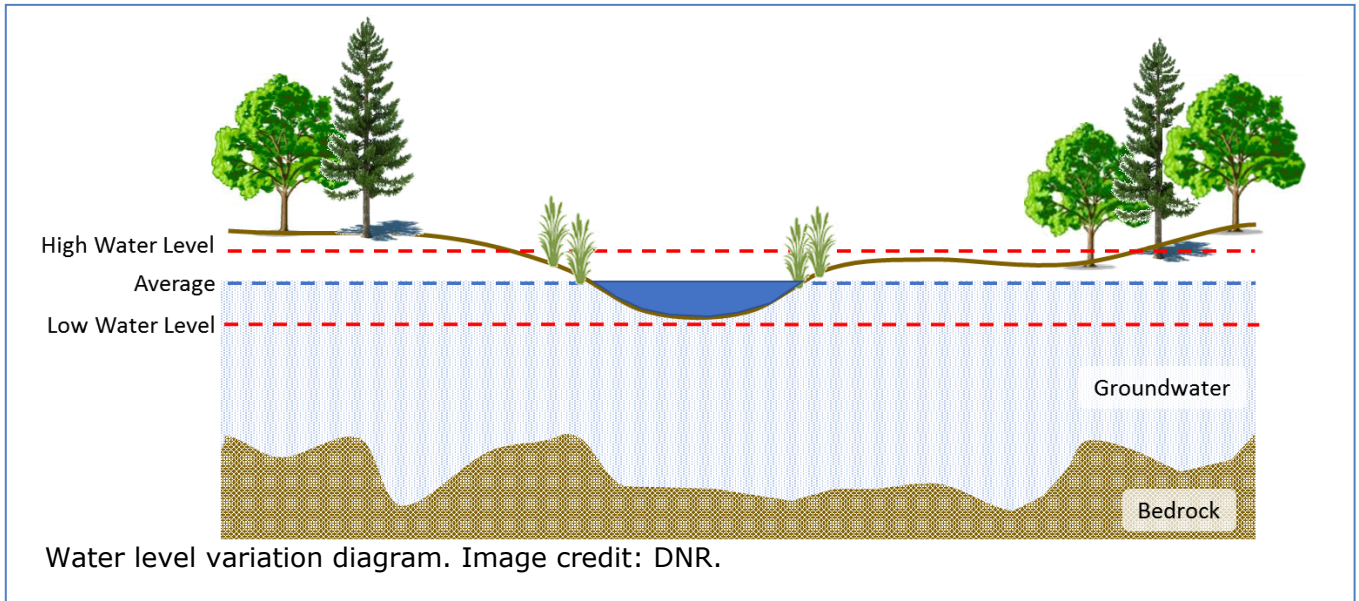


GROUNDWATER LEVELS AND AQUIFER RESPONSE

Groundwater level fluctuations

The upper surface of groundwater, referred to as the water table, can fluctuate in response to precipitation events and water withdrawals. During times of drought, local water tables can decline due to decreased recharge and increased water use (e.g. watering lawns, irrigating farm fields, municipal water supply). The result is that the water table can fall below surface water resources or from wells that withdraw water from the aquifer (see diagram below).



The opposite can also occur, resulting in a high water table (too much groundwater). Groundwater flooding occurs when frequent, sustained rainfall leads to excessively fast recharge of local groundwater levels and the water table rises above the land surface. This type of flood may be pronounced near seepage lakes (see diagram below). This type of flood can be long-lasting because water table decline requires drainage from the entire aquifer above the flood level. For the time that it takes for this drainage to occur, flood waters can cause significant property loss, human displacement and disruption of transportation.

Floods and droughts are part of life in Wisconsin and elsewhere, but they come with significant economic, public health and environmental costs.

During years when Wisconsin receives a record-breaking amount of precipitation, many areas in Wisconsin experience high water and flooding issues. Information is available from the DNR to help residents [cope with flooding](#). It may be difficult to determine if nearby flooding is due to surface water or groundwater flooding. For example, increased groundwater flow to nearby streams and rivers may cause the waterbodies to flood; or storm sewers that typically would drain to rivers don't work properly if too much inflow into the pipes from groundwater is occurring.

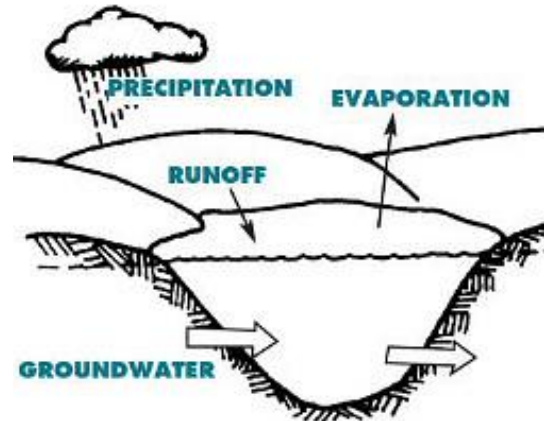
In years when there is a deficit in the precipitation, often in conjunction with above normal temperatures, drought conditions may be observed. Dry, hot weather increases evaporation rates of soil and vegetation, resulting in decreased soil moisture. This may result in parched, yellowed lawns, stressed or stunted vegetation, and below normal water levels. Longer periods of dry weather may also impact water availability. In response to the 2023 drought, DNR launched a [drought resource webpage](#).

Status of groundwater levels

After a period of above-average precipitation amounts from 2017-2020, groundwater levels were at or near all-time highs in 2020 and 2021. After a period of more typical precipitation amounts (2022) to below-average precipitation amounts (2023), groundwater levels declined.

Resources

- [Recommendations for private wells inundated by flooding](#)
- [Coping with flooding](#)
- [Flood insurance](#)
- [Drought resources](#)



Seepage lake: a natural lake fed by groundwater, precipitation and limited runoff. It does not have a stream outlet. Image credit: UW-Stevens Point.