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Drought and low groundwater levels – National monitoring and risk management

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The bedrock in Sweden is predominantly of crystalline origin and its potential to serve as water supply is often limited due to low effective porosity. Consequently, the regolith (Quaternary deposits) constitute the main water supplies.
A programme for national monitoring of groundwater in Sweden started in the late 1960's. The monitoring data are evaluated on monthly basis to assess groundwater situation, but the data could also be used to predict water scarcity. The south-eastern part of Sweden had extremely low groundwater levels during the period 2016 – 2018, which affected both private water wells and municipal water supply. These droughts demonstrated the need to coordinate the responsibilities between national and regional authorities to facilitate exchange of information and support risk management. However, improving the risk assessment necessitates increasing the number of monitoring sites and the use of modelling to predict groundwater levels. This is particularly important for the south-eastern part of Sweden where climate scenarios indicate decreased groundwater recharge. As the result, a project has been initiated to increase the spatial density of monitoring stations, and to introduce numerical modelling as a tool for forecasting droughts.