



## **The 2018 Northern Europe Hydrological Drought and its Drivers in a Historical Perspective**

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In Europe, several extreme summer drought events have occurred the last two decades, with the 2018 Northern European drought as the most recent example. A better understanding of the combined characteristics and the large-scale atmospheric circulation driving such events is of high importance to enhance preparation and mitigation planning of drought. Initial analysis based on the E-OBS daily gridded observational datasets, showed record-breaking May and July temperature in large parts of northern Europe caused by blocking systems centred over Fennoscandia. Resulting high evapotranspiration combined with precipitation deficit caused dry conditions over large parts of northern Europe. The objective of this study is to investigate the hydrological aspect (streamflow and groundwater) of the 2018 drought, in a historical perspective, in the Nordic countries (Norway, Sweden, Finland and Denmark). The analysis is based on high quality long records (at least 30 years) daily streamflow data for near-natural catchments in the Nordic countries. For groundwater, daily (or weekly) reference station data for Norway will be analysed. Further, the study will investigate potential co-occurrence of, and changes in, driving mechanisms of northern Europe drought events using gridded historical datasets (e.g. E-OBS and NCEP reanalysis data). This study will highlight the historical distinctiveness of the combined drivers and hydrological characteristics of the 2018 drought in the Nordic countries.