



## Supplement of

## The 2018 northern European hydrological drought and its drivers in a historical perspective

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Figure S1: Absolute anomalies of 2018 monthly highest temperature (monthly mean of daily maximum temperature) relative to the reference period 1971–2000.



Figure S2: Relative anomalies of 2018 monthly precipitation relative to the reference period 1971–2000.



Figure S3: Standardised monthly streamflow in 2018 versus 1959—2017 for the Atlantic regime stations defined in Figure 1. The monthly 1959—2018 time series were standardised by subtracting the period mean and dividing by the period standard deviation. The remaining stations (for which time series are not plotted in this figure) are represented by empty black circles.



(orange) and Transition (grey) regime stations defined in Figure 1. The monthly 1959—2017 for the Imand (cyan), Battic (orange) and Transition (grey) regime stations defined in Figure 1. The monthly 1959—2018 time series were standardised by subtracting the period mean and dividing by the period standard deviation. The remaining stations (for which time series are not plotted in this figure) are represented by empty black circles.



Figure S5: Standardised monthly streamflow in 2018 versus 1959—2017 for the Mountain regime stations defined in Figure 1. The monthly 1959—2018 time series were standardised by subtracting the period mean and dividing by the period standard deviation. The remaining stations (for which time series are not plotted in this figure) are represented by empty black circles.



Figure S6: Standardised monthly groundwater levels in 2018 versus 1959—2017 for the Region I regime stations defined in Figure 2. The monthly 1959—2018 time series were standardised by subtracting the period mean and dividing by the period standard deviation. The number on each point represents the number of stations at that location for which times series are plotted. The remaining stations (for which time series are not plotted in this figure) are represented by empty black circles.



Groundwater levels 2018 vs 1959-2017 for Region I delayed, II, III and III delayed regimes

Figure S7: Standardised monthly groundwater levels in 2018 versus 1959—2017 for the Region I delayed (pink), Region II (grey), Region III (dark blue) and Region III delayed (light blue) regime stations defined in Figure 2. The monthly 1959—2018 time series were standardised by subtracting the period mean and dividing by the period standard deviation. The number on each point represents the number of stations at that location for which times series are plotted. The remaining stations (for which time series are not plotted in this figure) are represented by empty black circles.