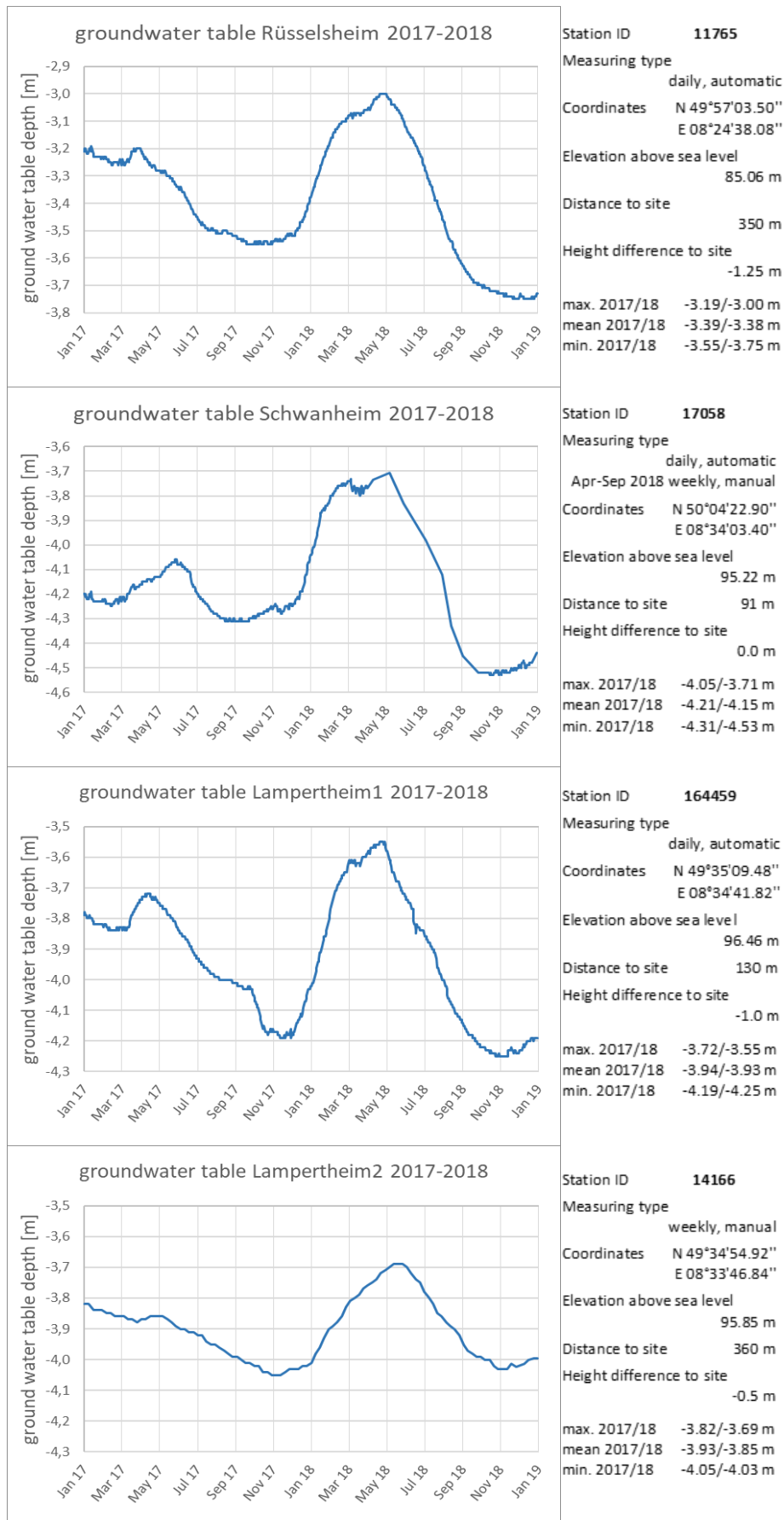
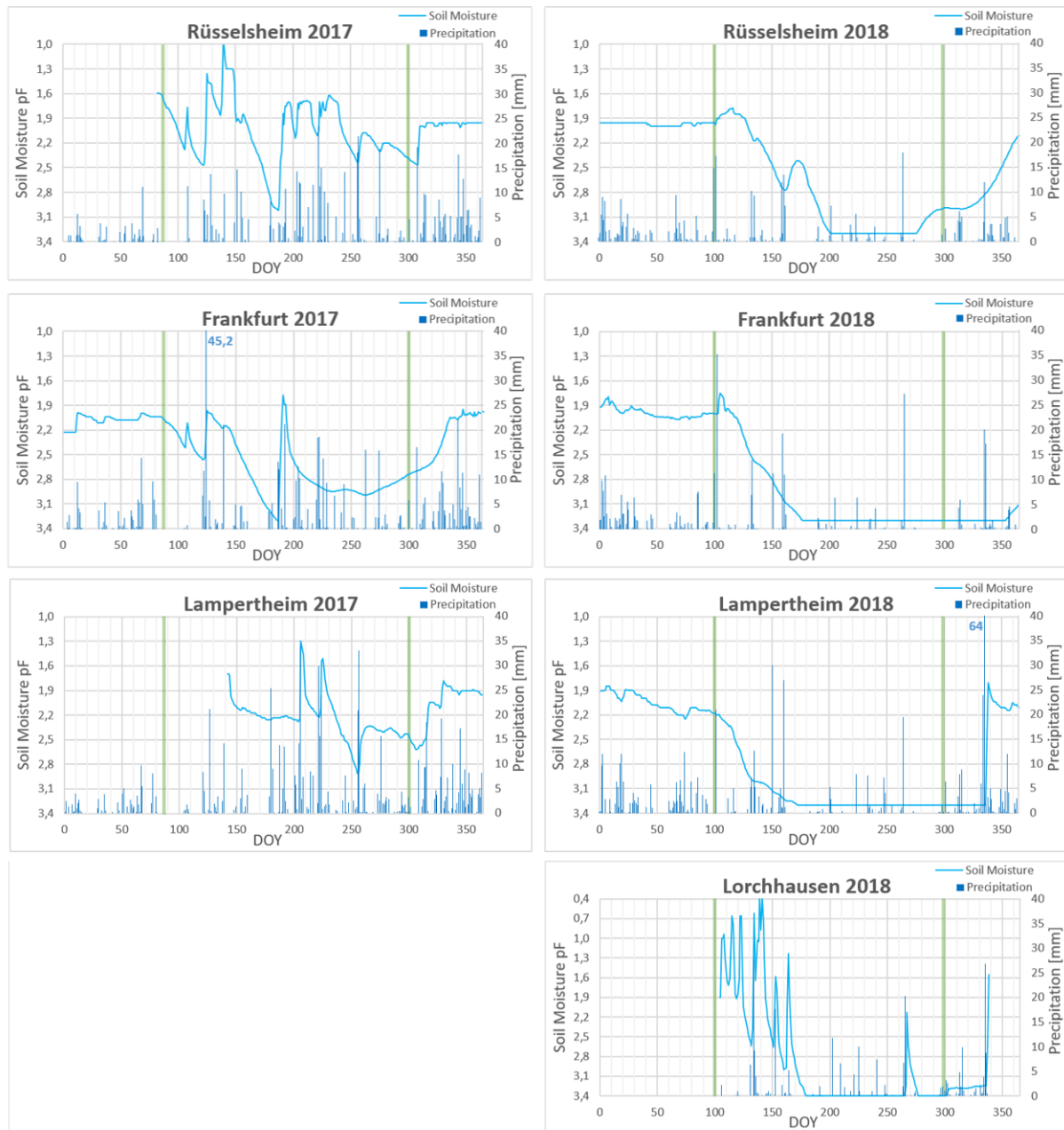


## Supplementary Figures



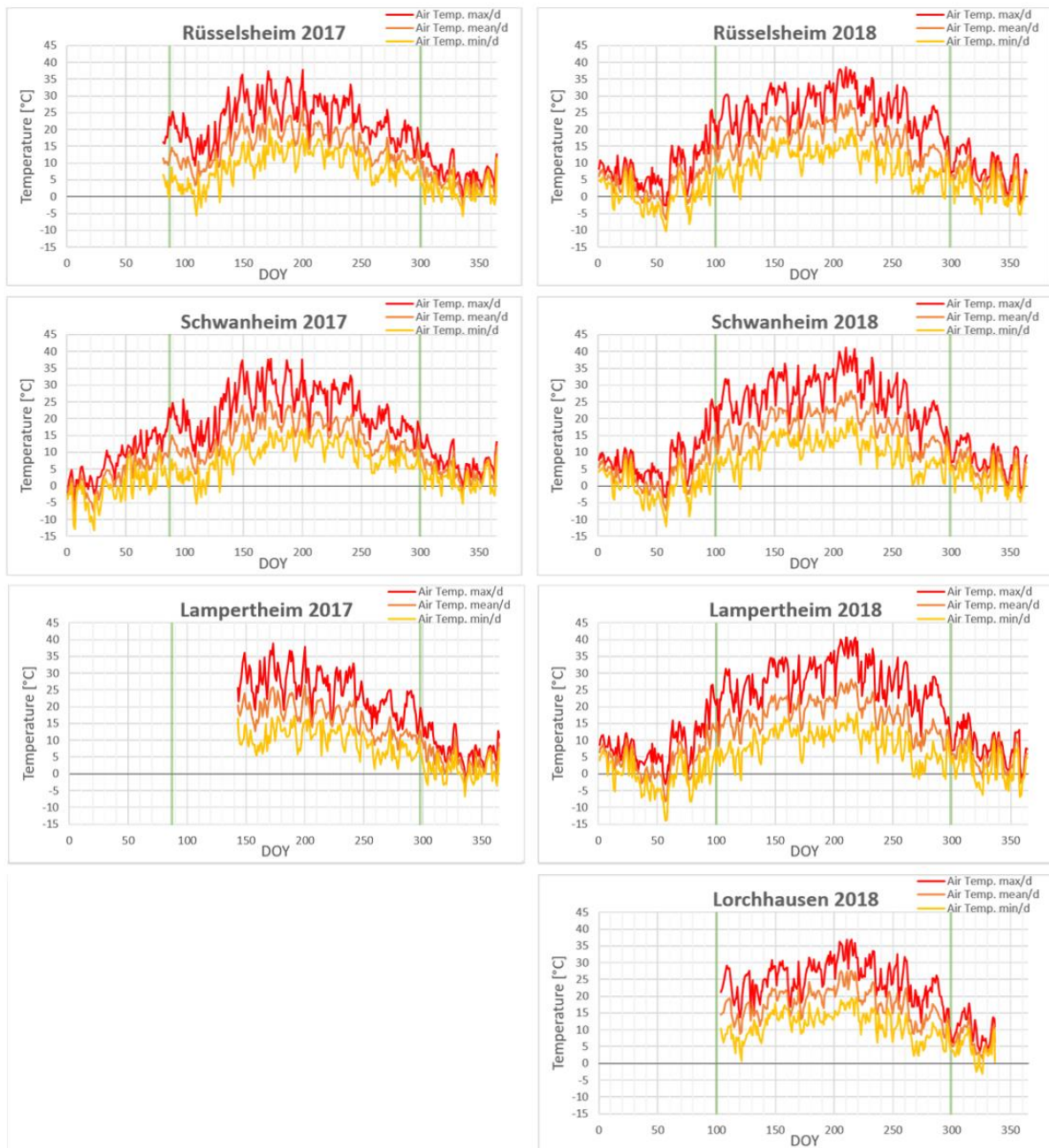
Suppl. Figure S1: Groundwater dynamics of 2012; 2017-2018 given as ground water table depth under the surface of the site level in meter. Data from Hessisches Landesamt für Naturschutz, Umwelt und Geologie, Wiesbaden, Germany.

## Supplementary Figures



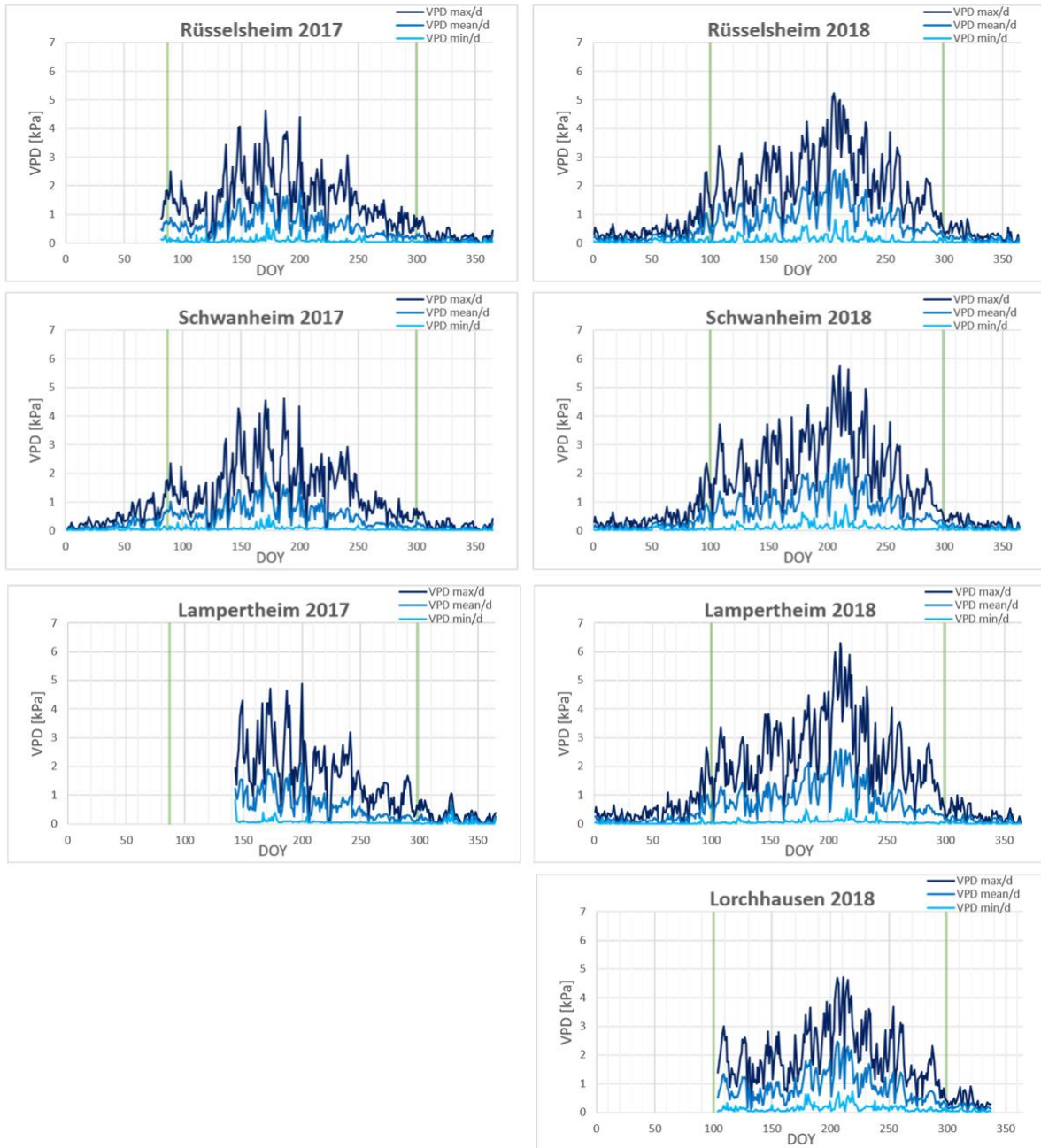
Suppl. Figure S2: Annual distribution of daily precipitation and soil moisture. Precipitation (dark blue bars) is given as the daily sum of rain in mm water column. On DOY 124 in Frankfurt 2017 the amount with 45.2 mm was greater than the range and is given as numeric value, same on DOY 337 in Lampertheim 2018 with 64.0 mm. The soil moisture (light blue solid line, measured in 1.0-meter depth) is given as the daily average of the pF-value. In 2017, the station in Rüsselsheim was offline until DOY 85 and in Lampertheim until DOY 148. The precipitation data for this period originate from DWD stations, near the monitored sites. The pale green vertical bars mark the beginning and the end of the growing season, determined by a mean daily air temperature  $T_{med} \geq 10^{\circ}\text{C}$  on five consecutive days in spring and  $T_{med} \leq 10^{\circ}\text{C}$  in autumn.

## Supplementary Figures



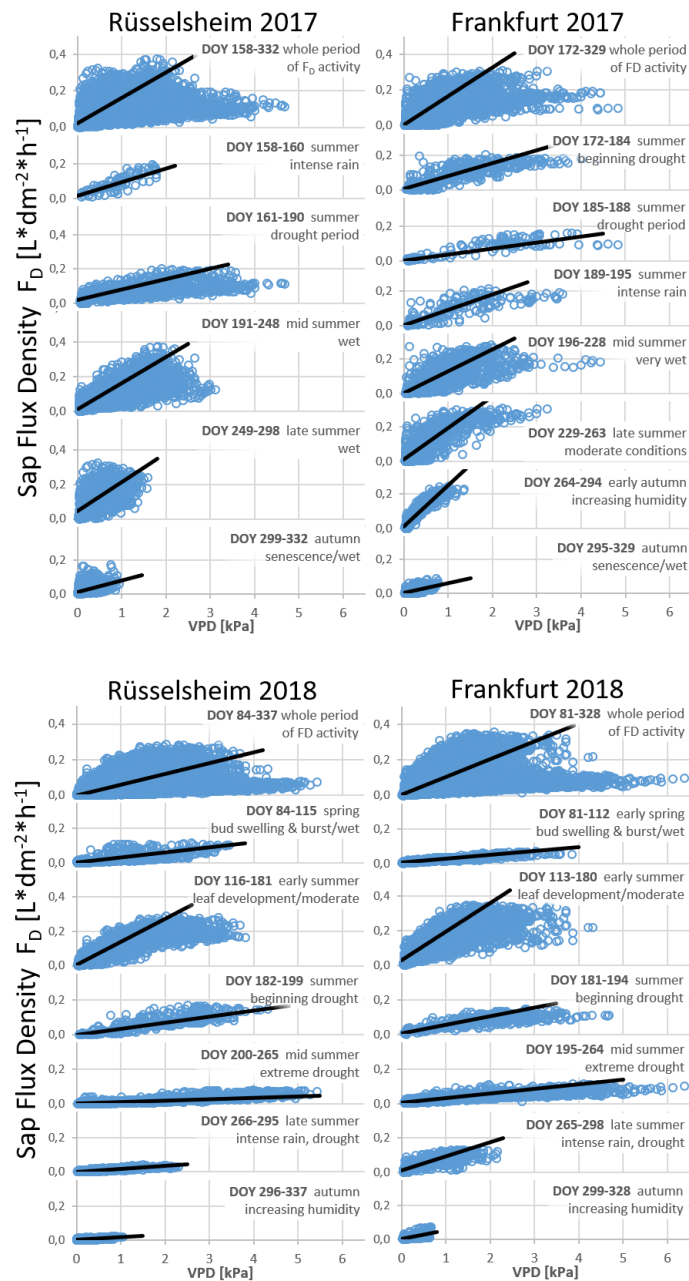
Suppl. Figure S3: Annual course of daily air temperature maxima (red line), mean (orange line) and minima (yellow line). The station in Rüsselsheim was offline until DOY 85 in 2017, and in Lampertheim until DOY 148 in 2017. The pale green vertical bars mark the beginning and the end of the growing season, determined by a mean daily air temperature  $T_{med} \geq 10^{\circ}\text{C}$  on five consecutive days in spring and  $T_{med} \leq 10^{\circ}\text{C}$  in autumn.

## Supplementary Figures



Suppl. Figure S4: Annual course of daily vapour pressure deficit (VPD). VPD is shown as maximum (dark blue line), mean (blue line) and minimum (light blue line) of the day. The pale green vertical bars mark the beginning and the end of the growing season, determined by a mean daily air temperature  $T_{med} \geq 10^\circ\text{C}$  on five consecutive days in spring and  $T_{med} \leq 10^\circ\text{C}$  in autumn

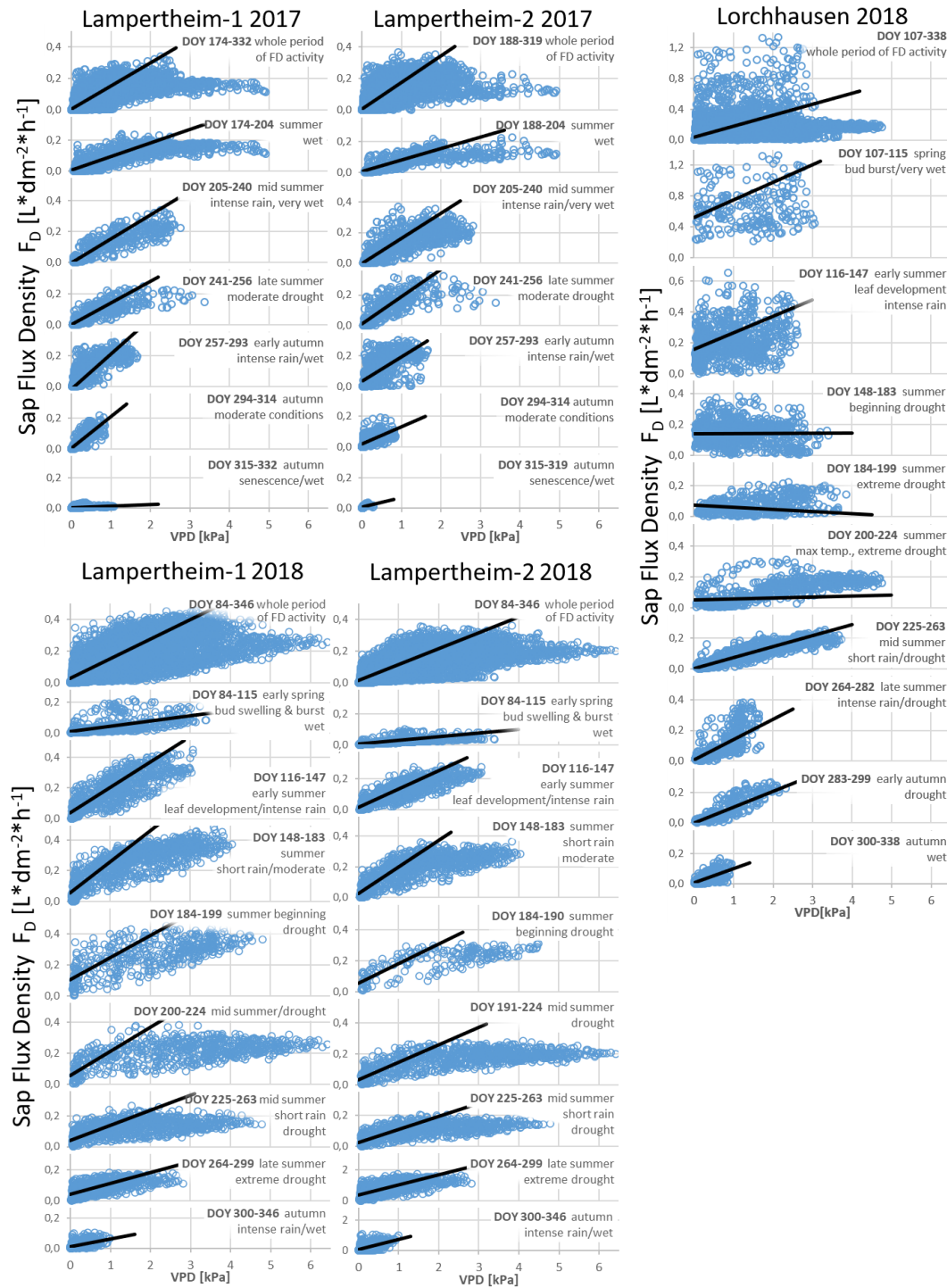
## Supplementary Figures



Suppl. Figure S5A: Plots of hourly Sap Flux densities vs. VPD in RU and SW, given for the whole vegetation period and separated for different developmental stages / drought and wet period. Black lines indicate linear regression of data points with  $VPD \leq 1$  kPa.



## Supplementary Figures



Suppl. Figure S5B: Plots of hourly Sap Flux densities vs. VPD in LA1, LA2 and LO, given for the whole vegetation period and separated for different developmental stages / drought and wet period. Black lines indicate linear regression of data points with  $VPD \leq 1$  kPa.