



## Supplement of

## Past and future discharge and stream temperature at high spatial resolution in a large European basin (Loire basin, France)

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Figure S1. Period of availability of daily Q and Tw in the retrospective simulation and in projections.



**Figure S2.** Annual cycle of Q under three GCM/RCMs and RCP 8.5 in the middle of the century (2040–2069) for two sub-basin (right) in the southern (L'Allier à Monistrol-d'Allier) and (left) northern part (La Loire à Montjean-sur-Loire) of the Loire River basin. For each day, the median and the 10th-90th percentiles of Q over the 2040–2069 period is calculated before applying a 30-day moving average. Colors show different GCMs+RCMs.



**Figure S3.** Summer Tw in retrospective and projections under RCP 8.5 at the outlet of three sub-basins in the upstream, middle and down-stream part of the basin as shown in Figure 1.



Figure S4. Spatial variability of summer Tw in projections under all GCMs/RCMs and RCP 8.5 at the end of the century (2070–2099).



**Figure S5.** Number of days with daily  $Tw > 25 \,^{\circ}C$  for the retrospective simulation and all GCMs+RCMs projections under RCP 8.5 at three sub-basins in the upstream (left), bottom (middle) and downstream (right) part of the basin.