

The **Forschungszentrum Jülich (FZJ) experimental water resources bulletin (eWRB)** gives a **regular seasonal update** on the **current state and the upcoming potential evolution of terrestrial near-surface water resources**. The eWRB is an open access research data product for an expert environmental sciences and stakeholder audience as well as the interested public.

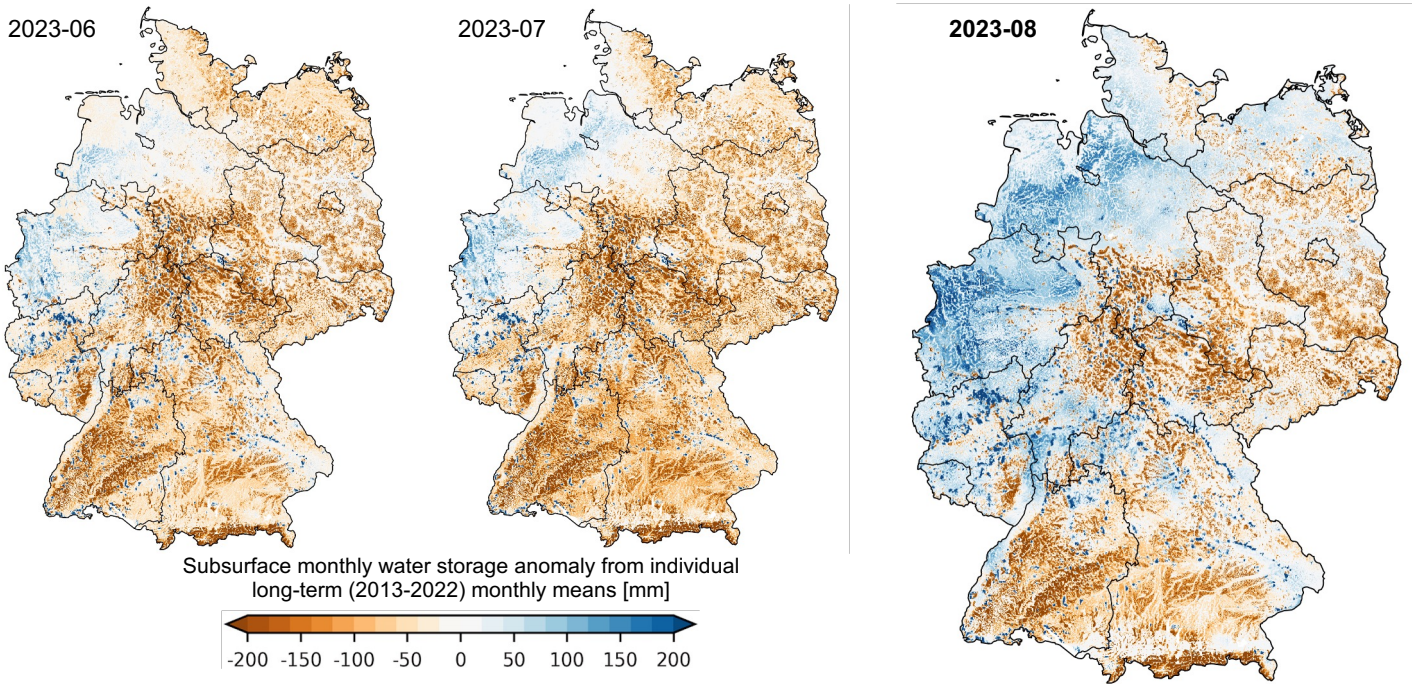


Fig. 1: **Monthly anomalies of total subsurface water storage for the past season** with respect to long-term monthly means from 2013-2022 in **mm water column** for the upper 60m of the subsurface. Data: Hindcasts from ParFlow/CLM simulations with ECMWF HRES atmospheric forcing.

State and possible developments: The wet Summer (July and August in particular) helped in the replenishment of subsurface water storage. Still, negative subsurface storage anomalies prevail on average during autumn and winter, albeit with large regional contrasts, based on a 50-member ensemble forecast initialized on 2023-09-01.

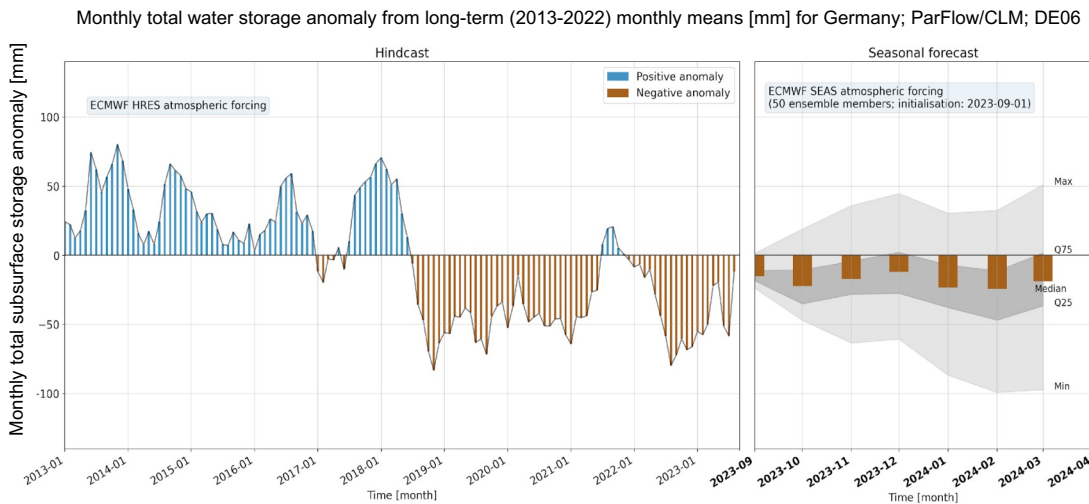
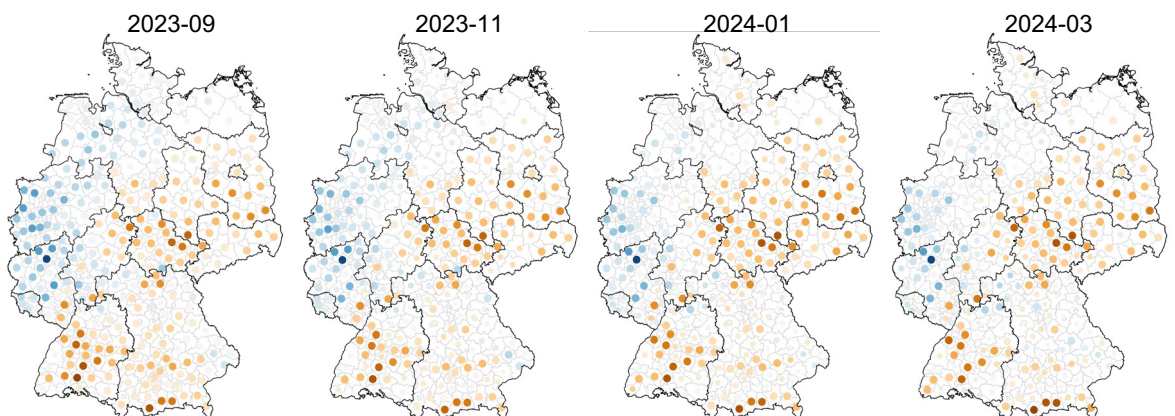


Fig. 2: **Past evolution of monthly total subsurface storage anomalies as spatial means for Germany** from 2013-Jan to 2023-Aug as simulated at 611m resolution with the ParFlow/CLM (www.parflow.org) integrated hydrological model based on daily forecasts driven by ECMWF HRES deterministic atmospheric forcing ("hindcast"), and 7-months forecast from 2023-Sep to 2024-Mar based on ECMWF SEAS 50-member ensemble ("seasonal forecast").

Fig. 3: **Seasonal forecasts (2023-Sep to 2024-Mar)**; mean of subsurface water storage anomalies from 50-member ParFlow/CLM ensemble (initialized on 2023-09-01), ECMWF SEAS seasonal ensemble prediction driven. Dots: NUTS-3 level administrative regions; dot size: proportional to how many members agree in their sign.



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Updates

The FZJ Water Resources Bulletin information products are prototypical scientific products, that are part of a knowledge transfer towards practical real-world applicability. The forecast products are generated in a quasi-operational mode, i.e., they are not part of an official forecasting service. Nevertheless, the FZJ Water Resources Bulletin project team attempts to provide a forecast at the beginning of each meteorological season, within reason.

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