

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.

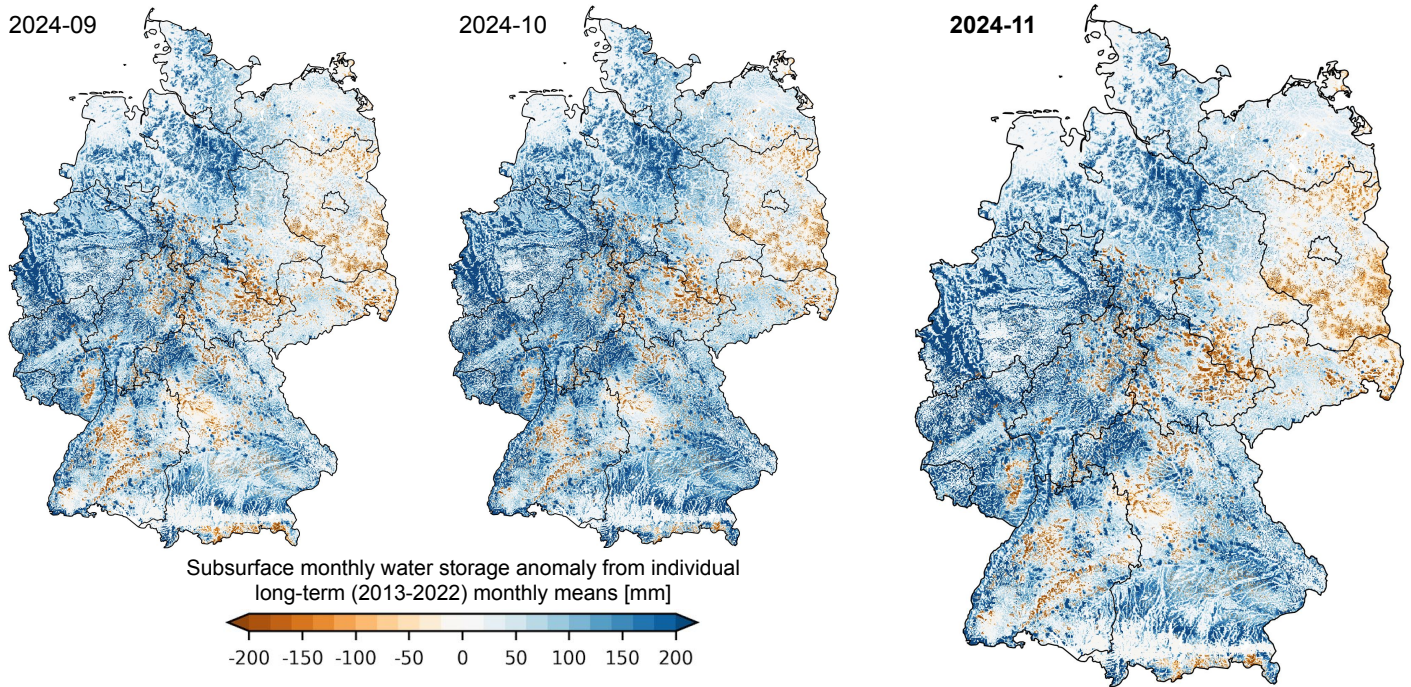


Fig. 1: **Monthly anomalies of total subsurface water storage, i.e. shallow groundwater, for the past season** with respect to long-term monthly means from 2013-2022 in mm water column. With the eWRB, the total subsurface water storage includes the shallow soil zone and groundwater to a depth of 60m. Data: Hindcasts from ParFlow/CLM simulations with ECMWF HRES atmospheric forcing.

State and possible developments: Autumn experienced further replenishment of subsurface water storage. Positive total subsurface water storage anomalies are anticipated for winter and spring in Germany with lesser degrees in the eastern parts, as indicated by a 50-member ensemble forecast initialized on 2024-12-01.

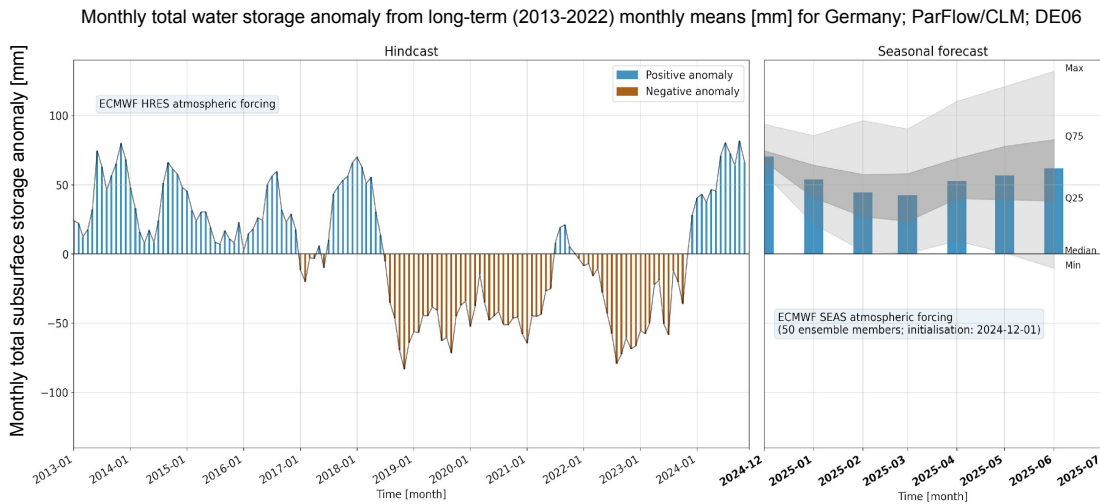
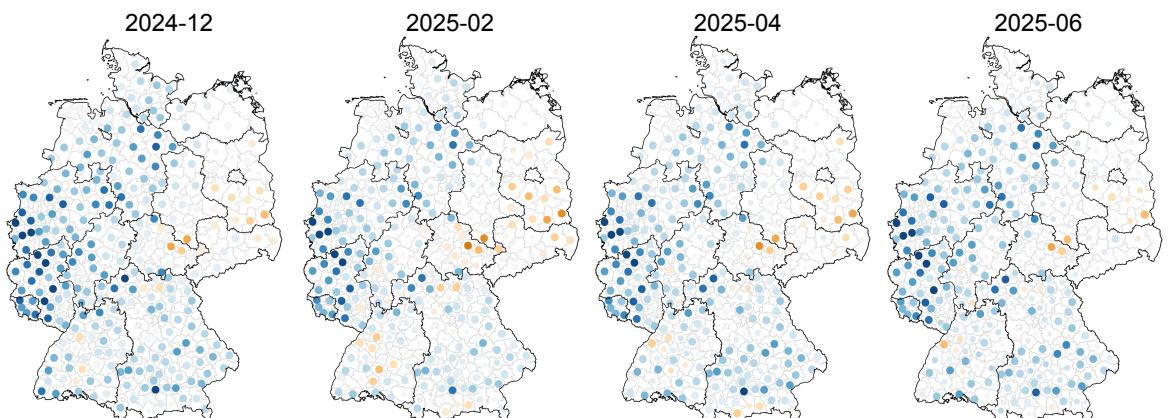


Fig. 2: **Past evolution of monthly total subsurface water storage anomalies as spatial means for Germany** from 2013-Jan to 2024-Nov as simulated at 611m resolution with the ParFlow/CLM (www.parflow.org) integrated hydrological model based on daily forecasts driven by ECMWF HRES deterministic atmospheric forcing ("hindcast"), and 7-months forecast from 2024-Dec to 2025-Jun based on ECMWF SEAS 50-member ensemble ("seasonal forecast").

Fig. 3: **Seasonal forecasts (2024-Dec to 2025-Jun; mean of total subsurface water storage anomalies from 50-member ParFlow/CLM ensemble (initialized on 2024-12-01), ECMWF SEAS seasonal ensemble prediction driven.** Dots: NUTS-3 level administrative regions; dot size: proportional to how many members agree in their sign.



Please observe the disclaimer on the back side

FZJ Experimental Water Resources Bulletin for Germany, usage conditions and disclaimer

www.adapter-projekt.de/bulletin

eWRB project team

A. Belleflamme, K. Goergen, S. Hammoudeh, S. Kollet
Research Centre Jülich, IBG-3 Agrosphere, 52425 Jülich, Germany
Contact: eWRB@fz-juelich.de

Citation

When using FZJ Water Resources Bulletin information products, please cite as follows: "www.adapter-projekt.de/bulletin (Forschungszentrum Jülich in the Helmholtz-Association)".

Usage conditions

The FZJ Water Resources Bulletin information products are open access, free research data from the FZJ Water Resources Bulletin [project team](#) and licensed under a [Creative Commons Attribution-ShareAlike 4.0 International License](#): CC BY-SA 4.0. The official Creative Commons Attribution-Share Alike 4.0 International License text is here: <https://creativecommons.org/licenses/by-sa/4.0/legalcode>.

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.

Disclaimer

The FZJ Water Resources Bulletin data, information, visualisations, diagnostics, analyses are provided "as is" and without warranty of any kind, either expressed or implied, including but not limited to warranties of merchantability, fitness for a particular purpose, and non-infringement. In no event shall the authors or copyright holders be liable for any claims, damages or other liabilities, whether in an action in contract, tort or otherwise, arising from, out of or in connection with the data, information, visualizations, diagnostics, analyses or the use of or other dealings in the data, information, visualizations, diagnostics, analyses.

Jülich, 2024-12-18