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# PWA Parma river basin Water Assessment



The impact of climate change on the natural and human environment has been studied intensively and has become a very important issue for Authorities and Administrations involved in planning activities which often have to face the lack of information on forecast scenarios about solid transport, water quality, ecological status, habitat presence or absence due to hydrological conditions, water resources availability.

### PWA in few words

PWA climate services aim to evaluate of fresh water balance, water quality, nutrient and bed loads transport including ecological issues using meteorological and climatological inputs. It works throughout a web system in which metadata, data, indicators and modelling results will be supplied according to international standards WMO/OGC compliant, including semantic and ontology facilities, using web services (WMS, WFS, etc). Potential users, such as the Po River District Authority, Emilia-Romagna Region, Interregional Agency for Po river, ISPRA, Land Reclamation Boards, will be able to query along the surface water bodies through an interactive system (Gis based) that can compare different scenarios.

### How it works

The services consist in the development both of hydrologic and water balance model, with different water allocation scenarios, and of a web interface user friendly and user-tailored. Users are provided with observed (hydrological observed data from Emilia-Romagna monitoring network, field surveys, etc ) and forecasted meteorological data, seasonal forecast and climate scenarios (RCP 4.5 and 8). The service is supported by DEWS system (Drought Early Warning System) which is operative at the premises of Arpae, Hydrography and Hydrology Area, which is the provider of PWA service. Starting from a meteorological input, TOPKAPI model reproduces the hydrological behavior of the basin; the outputs (simulated discharges) are the input for the water balance model RIBASIM (River Basin Simulation Model).

### Developers team

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 Development of hydrologic and water balance model: Arpae – Hydrography and Hydrology Area, idrologia@arpa.emr.it  
 Development of interactive system/web page: Arpae – Hydrography and Hydrology Area, idrologia@arpa.emr.it

