

# Water Information System - Forecasting



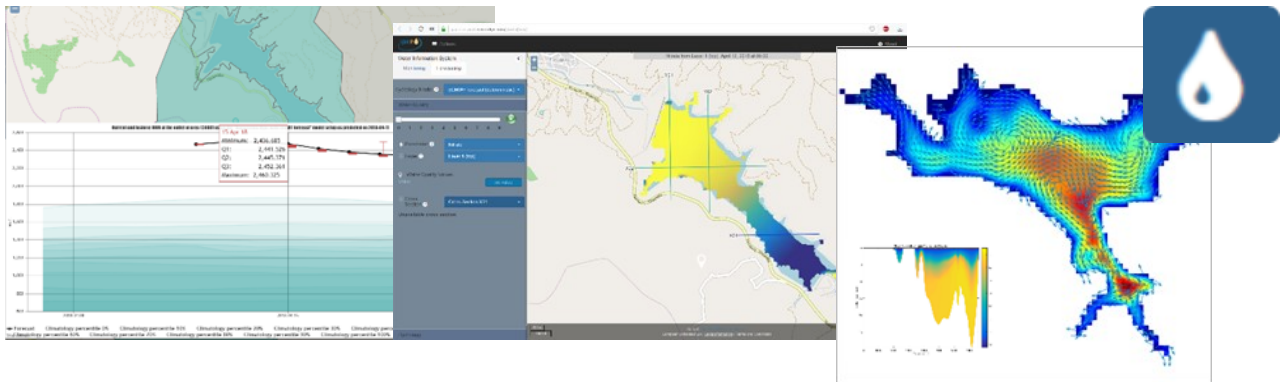
An operational service line powered by hydrological modelling in upstream catchment areas and hydrodynamic & ecological modelling inside the reservoir, enables the production of short term forecasts (up to 10 days) of hydrological and water quality related parameters.

## Applications

- Identify potential quality issues in the reservoir (e.g. harmful algae blooms, increased turbidity events) as early as possible to maximise potential response time.
- Enable proactive informed decision making in reservoirs through the provision of short-term forecasts of water quantity & quality.

## Benefits

- Forecasts of hydrological parameters for the entire upstream catchment areas of the reservoir.
- Water quality forecasts available for the entire reservoir domain including depth profiles.
- Improved forecasting skill through real-time data assimilation of Earth Observation and in-situ monitoring datasets.



## Product Overview

Hydrological forecasting is performed by the open-source HYPE model, a semi-distributed hydrological model that provides forecasts of river discharges, water temperatures, nutrient and sediment loads in the upstream catchments. Inside the reservoir 3D hydrodynamic and ecological modelling is performed with Delft3D Suite in order to estimate water elevations and velocity fields as well as critical water quality parameters for the next 10 days (various algae species, nitrogen, phosphorus, dissolved oxygen, suspended sediment, etc.). The forecasting service line has been structured so as to enable easy integration with external data sources (such as local weather forecasts) or existing calibrated ecological models in the area of interest.

Space Assisted Water Quality  
Forecasting Platform for  
Optimized Decision Making in  
Water Supply Services



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The SPACE-O Consortium



SPACE-O has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No 730005.

