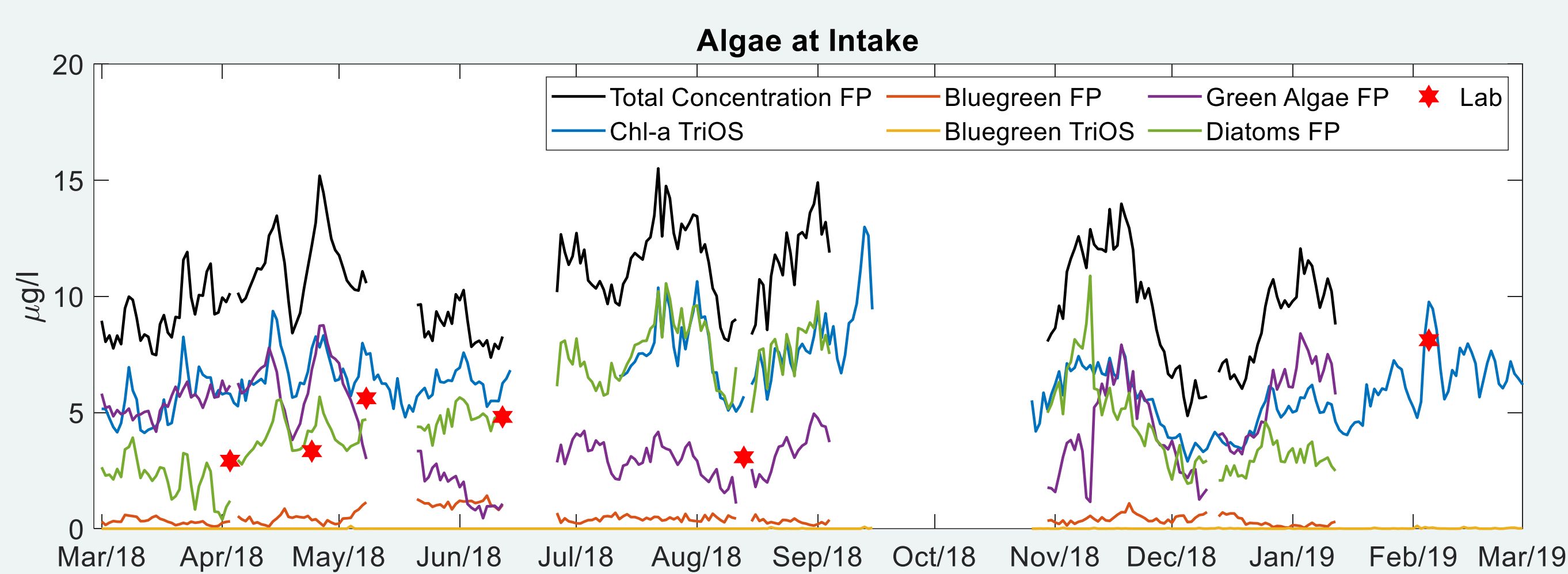


# MuDak-WRM – Research Highlights



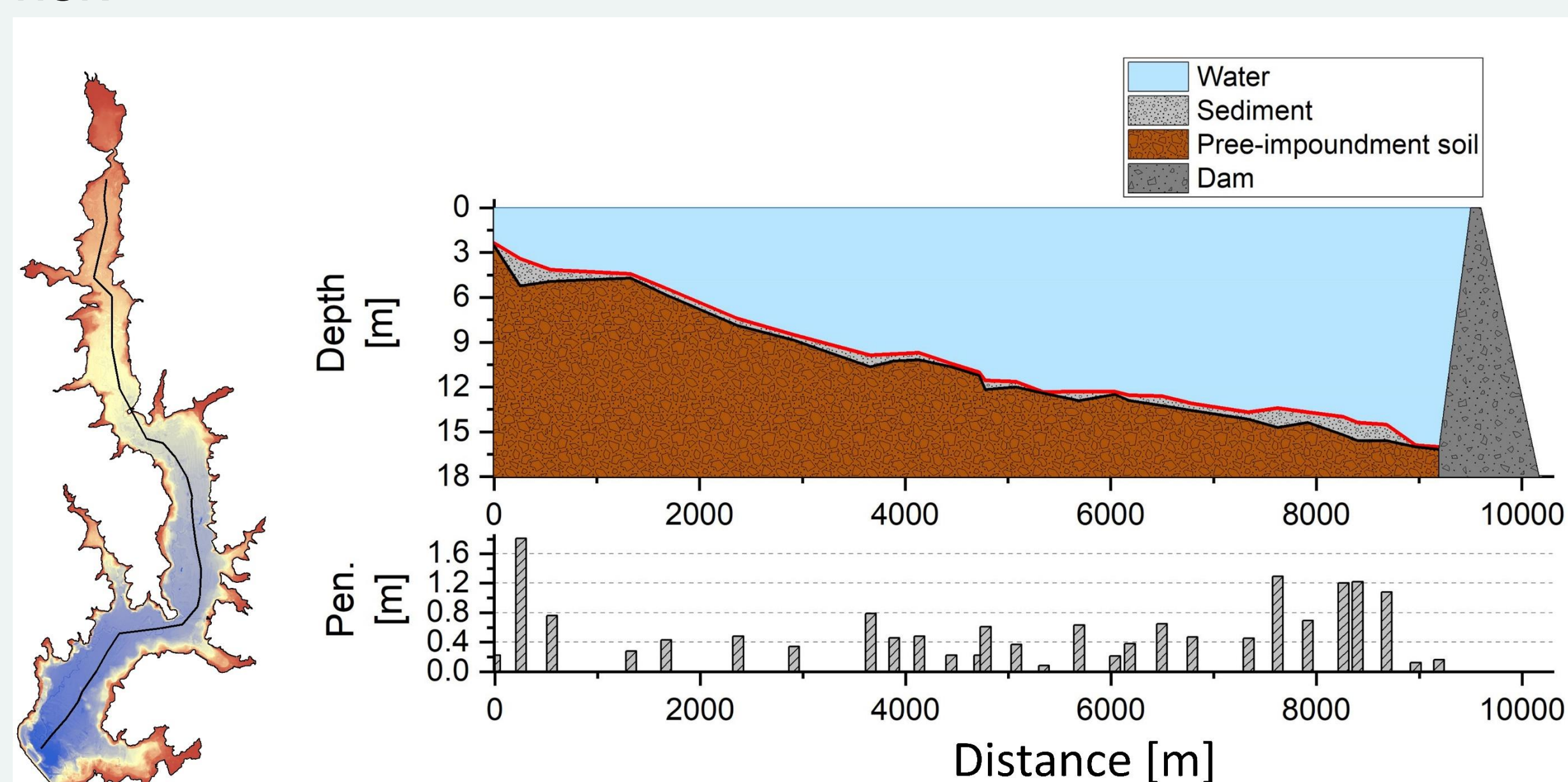
## 1. Trophic state and eutrophication potential

- Continuous monitoring of certain parameters at the water intake shows seasonality and critical conditions
- Successful numerical model reproduces stratification periods and water temperature
- Identification of vertical and horizontal gradient of water quality and P-release in reservoir by single monitoring events in nine locations
- Oligotrophic-Mesotrophic state of the reservoir although high P-stock is observed in the sediment



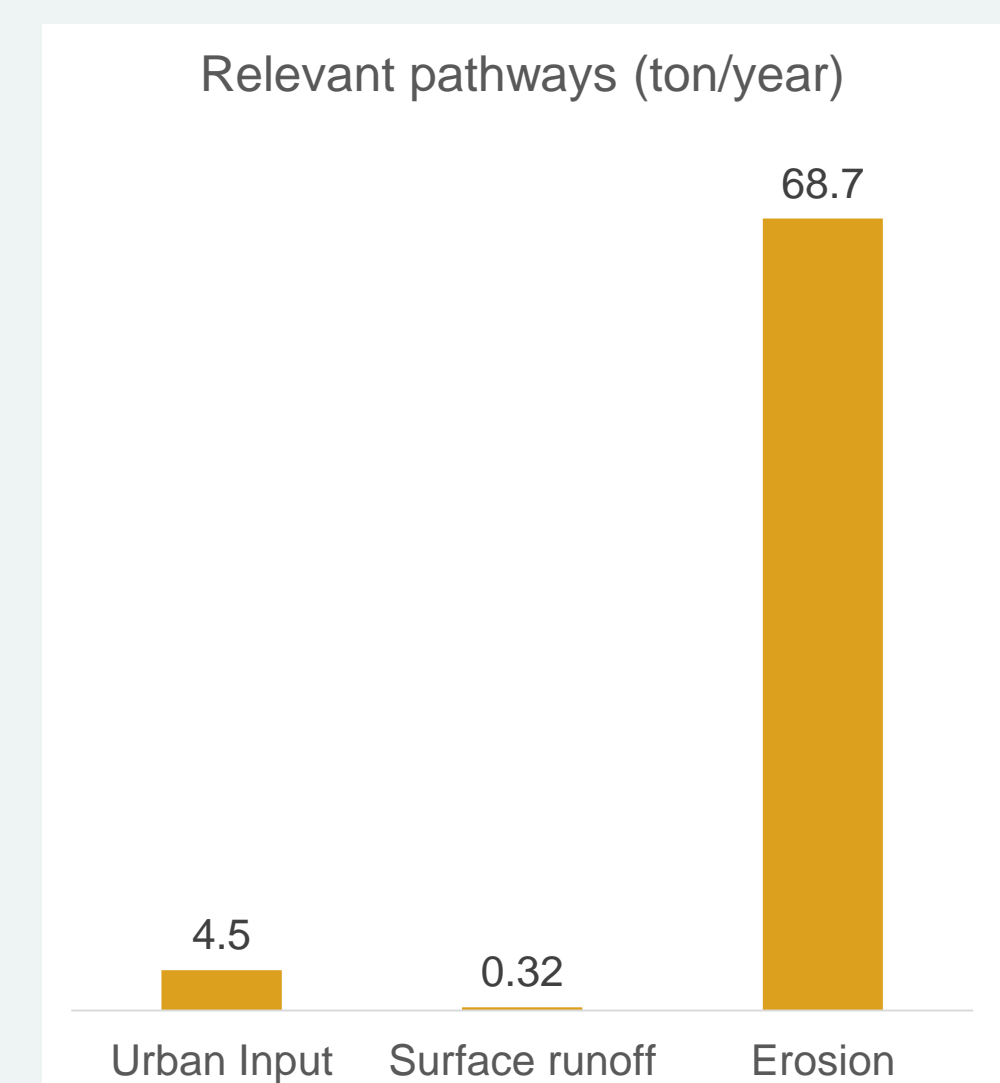
## 2. Sediment and Phosphorus stock assessment

- Assessment of sediment stock via sub-bottom profiling and penetrometer measurements
- Assessment of sedimentation rate via sediment traps
- Assessment of reservoir lifetime for a better resources planning-approx. 300 years before encountering sediment problems
- High Iron content in the sediment inactivates available P. However the high P stock in the sediment poses a long term risk



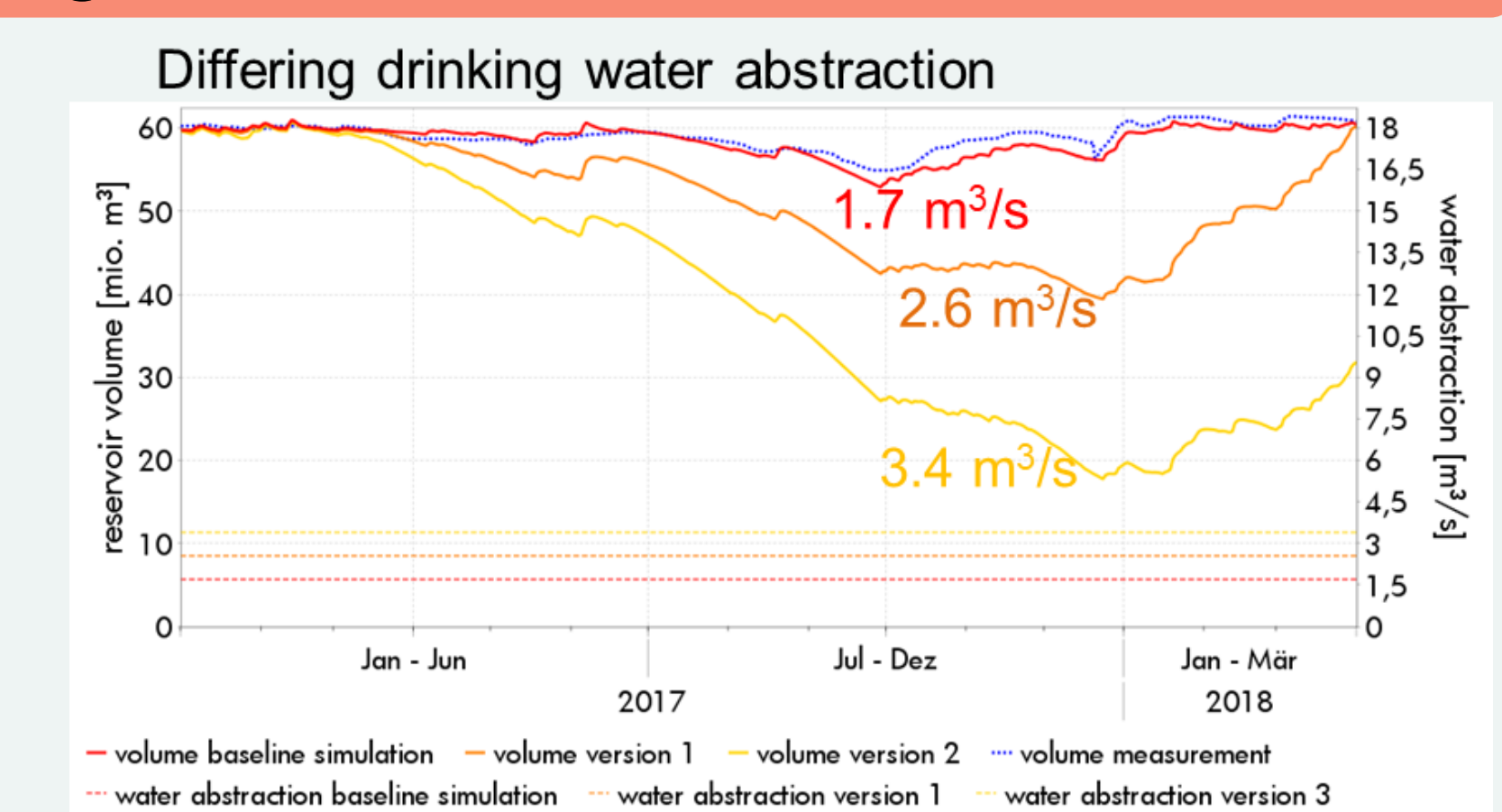
## 3. Assessment of input from catchment

- Phosphorus input from three major pathways:
- Erosion accounts for 93% of total P-Input
  - Settlements with no sewer connection
  - Orthophosphate in surface runoff



## 4. Hydrological modelling

Optimized water withdrawal, based on new calibrated hydrological model

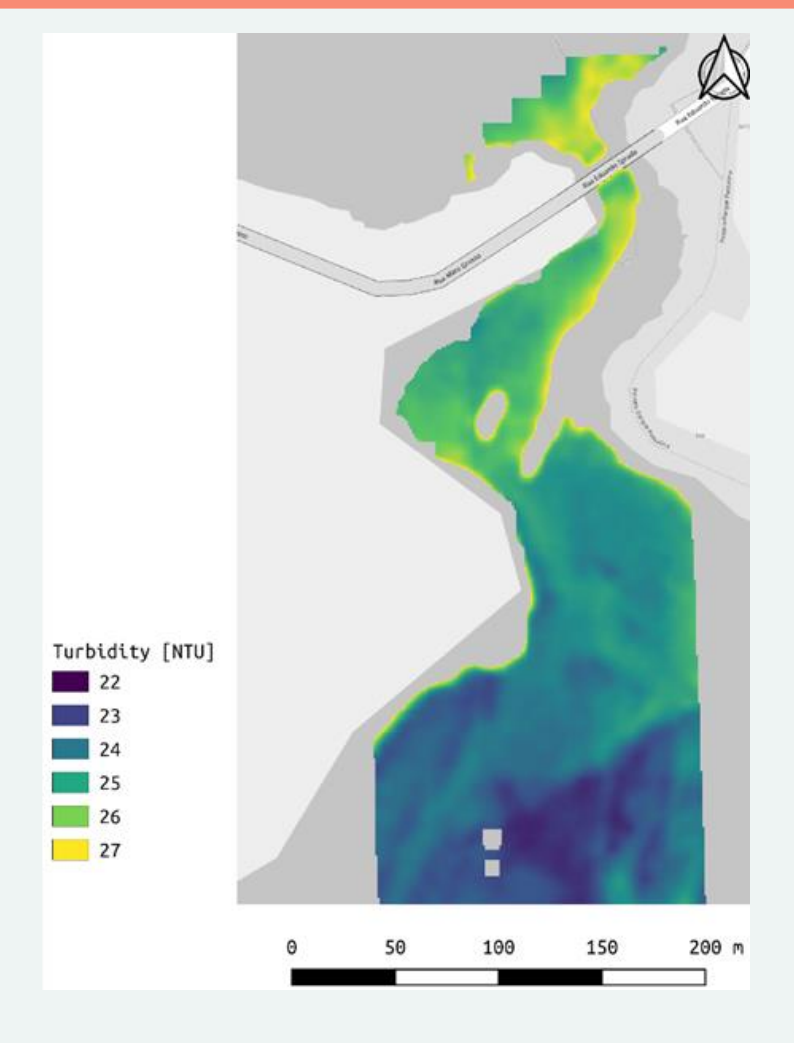


## 5. Remote sensing

Successful process automatization for the derivation of:

- LULC
- NDVI
- Soil sealing
- Leaf area index
- Albedo

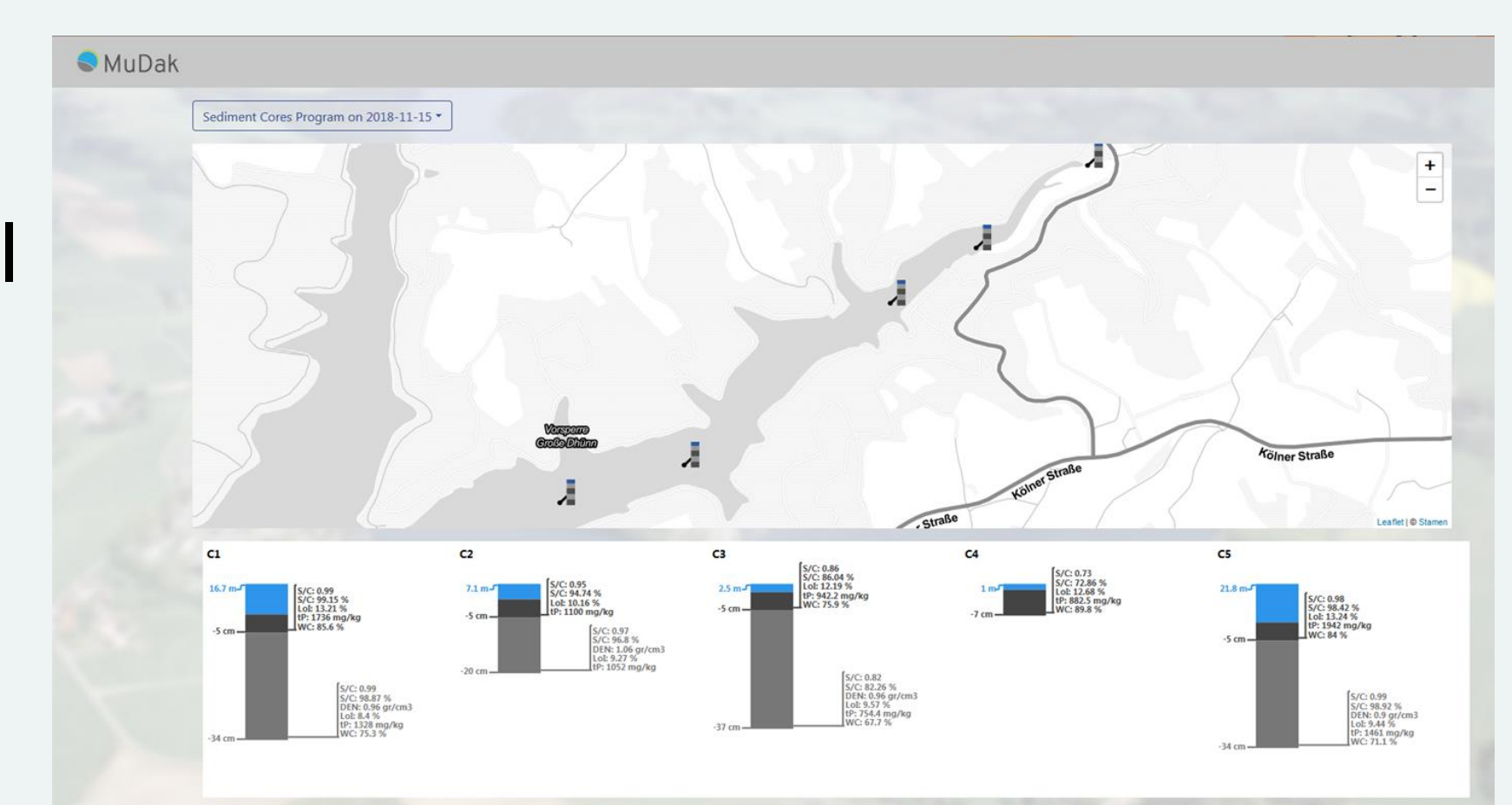
Successful assessment of water quality parameters from satellite and UAV imagery



## 6. Data storage and visualization interface

Sensor web for visualization of several data types :

- Raster
- Single event
- Time series



Karlsruhe Institute of Technology  
Institute for Water and River Basin Management  
Department of Aquatic Environmental Engineering

PD. Dr.-Ing. Stephan Fuchs  
email: stephan.fuchs@kit.edu  
Tel.: +49 721 608-46199  
Fax.: +49 721 608-44729

Gotthard-Franz-Str. 3  
Gebäude 50.31, 3. Stock  
76131 Karlsruhe  
Deutschland



[www.mudak-wrm.kit.edu](http://www.mudak-wrm.kit.edu)



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