

## Thematic Workshops

The aim of the three thematic workshops is to discuss the following aspects (1) for the specific workshop themes and (2) for the whole focus area Hydro-CH2018:

- Identification, evaluation, and prioritization of current knowledge gaps
- Ongoing and recently completed research activities in the field
- Stakeholder needs and questions

The focus area research concept may provide a first indication of potential research questions that will be discussed during the workshops.



### **Workshop 1: Natural and Artificial seasonal water storage – Effects on the Future Water Balance**

*Moderation: Petra Schmocker-Fackel, BAFU*

In-depth knowledge of the anticipated changes in seasonal water storage as a result of climate change (e.g. in groundwater, snow and ice, in the soil but also in regulated and unregulated lakes and reservoirs.) is a condition for successful water resources management.

Pressure is growing on Switzerland to implement climate adaptation measures in the area of natural and artificial lake management. In fact, the type of regulation applicable to several major sub-alpine lakes is currently at the centre of discussions with Italy and France. For that reason, it is extremely important to clarify the hydrological and ecological aspects of this type of lake and reservoir management and its interdependency to the other natural water storages.



### **Workshop 2: Water Temperature and quality in Surface and Ground Waters**

*Moderation: Fabia Hüsler and Samuel Zahner, BAFU*

Water temperature is a key parameter for chemical, biological and physical processes and greatly influences water quality, water ecology and the potential use of bodies of water. In the future, the average air temperature will continue to rise and lead directly to

significantly higher water temperatures in surface waters and groundwater. Low flow periods or droughts are also expected to occur more frequently and to be more severe in the future. This will further increase high water temperatures and problems with water quality. Due to the highly interconnected functionality of water temperature, comprehensive process knowledge is of central importance. More efforts are required to derive projections and scenario analyses of the consequences of climate change on water temperature and water quality and maybe even incorporate them in operational forecasts.



### **Workshop 3: Extreme Events (Floods and Low Flow Events)**

*Moderation: Olivier Overney, BAFU*

An increasing frequency of extreme hydrological events accompanied by a constant rise in potential damage is a huge risk for society: While local water supply shortages and usage conflicts can occur due to increased and prolonged low water flows, floods cause millions of CHF in damage. It is known that climate

change will continue to impact the mean values and the distribution of climatic variables and therefore also the frequency and seasonal occurrences of extreme (hydrological) events like floods and low flows. Only through a better understanding of the underlying processes (e.g. extreme rainfall events, runoff formation, sediment transport) information about future developments can be acquired to provide a basis for appropriate adaptation measures. We also hope that the new CH2018 climate scenarios will allow a better estimation of the frequency and severity of extreme events in a future climate.