

# Hydrological Yearbook of Switzerland 2020

Discharge, water level and water quality of Swiss water bodies

Summary of the publication «Hydrologisches Jahrbuch der Schweiz 2020»  
[www.bafu.admin.ch/uz-2109-d](http://www.bafu.admin.ch/uz-2109-d)

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# Summary

## Weather conditions

The annual mean air temperature in most parts of Switzerland in 2020 was 1.4 to 1.7 °C above the 1981 – 2010 average. At 1.5 °C above average, 2020 saw the highest national mean temperature since measuring began in 1864, along with 2018. Annual precipitation widely reached 80 to 100 % of normal levels during the reference period.

## Snow and glaciers

Over the entire winter of 2019/20, the depth of snow was slightly below average throughout Switzerland. The second half of the winter was decidedly dry in the south. The central northern Alps also received less precipitation than usual, but there was more snow in Valais. The glaciers continued to lose volume during summer 2020. Although not an extreme year, glacial retreat remains immense and is changing the Alpine landscape permanently.

## Discharge conditions, lake levels and water temperatures

The annual discharges in northern and north-western Switzerland were significantly below average in 2020. The discharge levels in individual river basins in Valais and Engadine were above the mean value of the 1981 – 2010 reference period. Over the course of the year, high water levels at the beginning of the year and in October alternated with low levels in early summer. These strong fluctuations were also observed in the lake levels, especially during the autumn floods. Mean water temperatures were high in certain places, particularly in the Jura and the Alpine region.

## Stable isotopes

A warm spell in February 2020 resulted in precipitation with above-average  $\delta$  values for the time of year. When air temperatures were high from May to July, higher precipitation  $\delta$  values were recorded in this period compared with long-term levels. Seasonal changes in  $\delta^2\text{H}$  and  $\delta^{18}\text{O}$  values were also observed in rivers.

## Suspended sediment loads

The monthly suspended sediment loads were higher in August in nearly all the monitoring stations north of the Alps than those of the comparative period. Increasing precipitation north of the Alps in October resulted in suspended sediment loads higher than the monthly average.

## Groundwater

Groundwater levels and spring discharges were low between April and July at about one in three monitoring sites compared with the long-term average. During the heavy rainfall in October, the groundwater level at nearly every second monitoring site was temporarily high. Moreover, almost half the monitoring sites recorded high groundwater temperatures.

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## Further information

Further information on the topics in the Hydrological Yearbook and the FOEN hydrometric monitoring networks, and current and historical data is available at [www.bafu.admin.ch/hydrologicalyearbook](http://www.bafu.admin.ch/hydrologicalyearbook)

**Current and historical data:**

[www.hydrodaten.admin.ch/en](http://www.hydrodaten.admin.ch/en)

**FOEN Hydrological Bulletin:**

[www.hydrodaten.admin.ch/de/hydro\\_bulletin.html](http://www.hydrodaten.admin.ch/de/hydro_bulletin.html)

**FOEN Groundwater Bulletin:**

[www.hydrodaten.admin.ch/de/grundwasserbulletin.html](http://www.hydrodaten.admin.ch/de/grundwasserbulletin.html)

**Results of the National Groundwater Monitoring Programme (NAQUA):**

[www.bafu.admin.ch/naqua](http://www.bafu.admin.ch/naqua)

**Results of the National River Monitoring and Survey Programme (NADUF) – data download:**

<https://opendata.eawag.ch/dataset/naduf-national-long-term-surveillance-of-swiss-rivers-2020-1>

**National River Monitoring and Survey Programme (NADUF) – monitoring network:**

[www.bafu.admin.ch/naduf](http://www.bafu.admin.ch/naduf)

**Results of the National Surface Water Quality Monitoring Programme (NAWA) in maps:**

<https://s.geo.admin.ch/7902c509b7>

**National Surface Water Quality Monitoring Programme (NAWA) – monitoring network:**

[www.bafu.admin.ch/nawa](http://www.bafu.admin.ch/nawa)

**Water indicators and further information on water:**

[www.bafu.admin.ch/water](http://www.bafu.admin.ch/water)