HYDROLOGISCHER ATLAS DER SCHWEIZ
ATLAS HYDROLOGIQUE DE LA SUISSE
ATLANTE IDROLOGICO DELLA SVIZZERA
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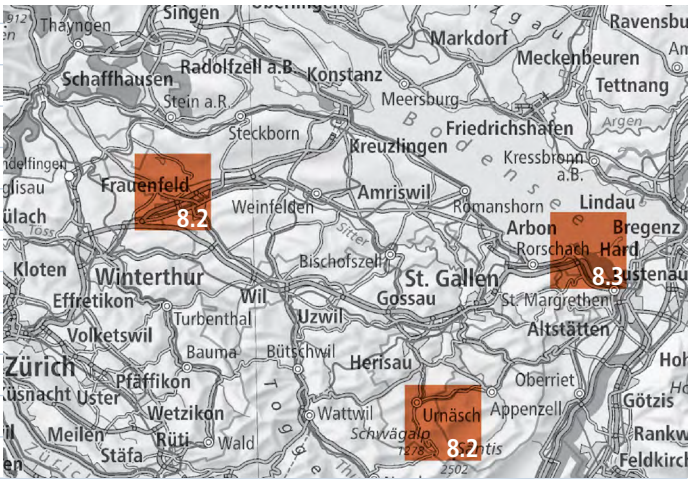
Lakes and rivers often accompany us over long periods of our lives: the stream behind the house has been flowing as long as one can remember, the lake in the valley has been there since time immemorial. This continuity is also needed by the people and institutions that are concerned with hydrological phenomena. For over 25 years, HADES has demonstrated this continuity, providing verified hydrological information for students, researchers and practitioners.

Brief project updates

Excursion guide – Series 8

Three new HADES excursions are currently being planned for northeast Switzerland. Excursion 8.1 focuses on aspects of river restoration along the Thur River in the Frauenfeld region and is developed by Katharina Edmaier and Samuel Zahner from the Water Division at FOEN. Excursion 8.2 leads from the Schwägalp to Urnäsch. In this pre-alpine catchment, topics like the formation of glacial and moorland landscapes, the influence of snow on the water balance and the use of hydropower are examined. Monika Jung and Martin Gassner from the Office for Nature and Landscape AG in Herisau are responsible for the content. Bruno Schädler, formerly of the Institute of Geography at the University of Bern, introduces readers to the mouth of the Rhine River at Lake Constance in excursion 8.3. This area has been massively altered by natural and anthropogenic processes. The guide explains past and present developments and addresses specific features of the Alps and Lake Constance.



Location of the new excursions in northeast Switzerland (Map basis: swisstopo)

Understanding Water teaching material

The second Understanding Water learning module, «Valais: Water Management in Transition», will be published this summer. It consists of the self-contained themes «water supply», «use of water», «water distribution» and «water management up to 2100». To ensure the water supply until the end of this century, the municipalities of Crans-Montana-Sierre must take into account the complete melting of the Plaine Morte glacier and the resulting socioeconomic changes.

Aerial view of the Crans-Montana plateau. On the left side of the image is the Tseuzier Reservoir, which will play an important role in the future water management options of the region. (© DDPS)

The *Understanding Water* teaching material provide important hydrological content for geography courses at the high school level. The subject sheets and the accompanying e-book support an in-depth and analytical examination of current questions in hydrology.

New HADES employee

Alain Bühlmann joined the HADES team in the middle of February this year. In the coming months, he will devote himself to the revision and extension of HADES data. This section of our website is now integrated into the main page at www.hades.unibe.ch. The goal of this integration is to make it easier to access the digital data associated with the maps of the Hydrological Atlas.

Alain Bühlmann studied geography and physics at the University of Bern. During the course of his master's thesis in the Hydrology Group, in which he focused on the prediction of water supplies using artificial intelligence, he learned to appreciate the value of digital data. He also likes to spend his spare time ski touring, with the help of informative maps!

New employee with a view (photo: Alain Bühlmann)

29th October 2016 – National Map Day

A «home game» for HADES was the autumn meeting of the Swiss Society for Cartography SGK, which was hosted by the Institute of Geography at the University of Bern. Felix Hauser presented the program of the Hydrological Atlas to a large and interested audience. At the «Werkschau Kartographie Schweiz» workshop, visitors had the opportunity to test and familiarise themselves with the new 3D atlas via a series of tasks. The questions and reactions of the users revealed some of the possibilities and limitations of the software. This valuable feedback will help us to further improve the delivery of free, high-quality hydrological information. A look back at the event can be found on the homepage of the SGK:
http://kartografie.ch/veranstaltungen/archiv-veranstaltungen/2016-werkschau/

Exhibition stand with analog and digital products (photo: HADES)

At the source of hydrological information

Interview with Martin Barben, HADES Project Leader at Federal Office for the Environment FOEN

HADES: When in the course of your professional career did you come in contact with HADES?

Barben: I can't really say anymore. I began my studies in Bern in 1989. Shortly after the basic courses, it was clear to me that I wanted to graduate in hydrology. I then worked as a student assistant, where checking the new HADES plates was one of my tasks. Of course, I didn't do this alone, and I remember that we worked very thoroughly. I quickly realised, for example, that it was impossible to change anything on the basis of a vague criticism – you had to justify any critique very well. I don't know if I ever made a successful corrective suggestion to Felix! [Laughs] Since then, I have been involved as the author of plate 3.6, a snow map [*Variation of the Snow Line*]. This map combines the use of remote sensing and ground measurements; I worked on the evaluation of the snow data.

HADES: You are also the lead author of plate 6.5 [*Water Balance in Selected Medium-Sized Catchments 1961–2007*], which is a rather special plate. What is it about, and how did it come about?

Barben: One of the issues that falls under my responsibility at the FOEN is the water balance. Thus, the question arose as to whether I could compile something similar to the map for the river areas [*plate 6.1*] for the smaller catchment areas. I was quite skeptical at first. Only with time-series of precipitation, runoff and evaporation, this wouldn't have been so spectacular. But then came a collaboration with Pascal Hänggi and Daniel Viviroli. The result gives an interesting insight into the water balance of the HUG, in which the time-series are supplemented by innovative statistical evaluations and modeling.

HADES: HUG?

Barben: These are the approximately forty hydrological research areas «Hydrologische Untersuchungsgebiete» of the FOEN. The name may awaken too high expectations. The goal is to document areas that are as unaffected as possible, which is almost impossible in most areas of Switzerland due to human influences. Precipitation and runoff are measured, and evaporation is calculated as the remainder. These regions are interesting for several reasons, but especially because of the insights they yield about longer-term changes in the water balance.

HADES: You have been the HADES project manager at FOEN for several years. This is a bit confusing because there are already two project managers at the GIUB. How are the tasks shared between you?

Barben: The FOEN is the client of the HADES, and the leader of the Hydrology Division also run the HADES program. As a project manager, I am the central contact person at the FOEN and am responsible for ensuring communication with the Institute of Geography. I do not develop any concrete content for HADES, but I so work closely with the project management at GIUB on specific questions.

HADES: When was the last time you looked something up in the HADES?

Barben: Recently; it was an external question about the hydrological significance of mountain regions in Asia. I recalled Viviroli's plate showing the hydrological significance of the Alpine space [*plate 6.4*]. Through this, I came across a publication that explored the significance of mountains for runoff worldwide.

In my workday, however, I am usually not dependent on the information from the HADES. In the FOEN, we are often at the source of hydrological data and also have other ways to get information. But since I am now one of the few people at the FOEN in possession of printed copies of the HADES, colleagues often come visit me to look things up.

HADES: And do you prefer to work with printed maps or with a screen?

Barben: I first orient myself using the website. This is easier, and I quickly find the map I want using the table of contents. It then depends on the question.

But it's not just the content that's important. Some maps are aesthetically pleasing, such as the different precipitation maps. With some exceptions, HADES has some very nice maps.

HADES: Which ones?

Barben: I don't like maps with many small elements that make an intuitive understanding difficult. I prefer wide-ranging maps that one can understand the meaning of at first glance.

HADES: Do you like «your» plate 6.5, which isn't really a proper map?

Barben: True, it's not a «real» map, but I am still satisfied because of the graphic elements created by Hänggi.

HADES: An important concern of HADES is the transfer of hydrological information to non-specialists. What is your experience with the series of excursion guides or the learning materials in this regard?

Barben: Last year, the Hydrology Division tested the excursion in the Lower Valais as part of a training course, and of course I was at the press conferences for the new excursions. I have also looked at the learning materials with interest. The concept is very exciting and the result is attractive. And of course, it is quite special that the author, Matthias Probst, is a teacher and lecturer for teaching methods in geography at the Teaching College PH Bern! Environmental education is a major concern for FOEN. A speech made by HADES on this subject was met with great approval at FOEN last year.

Martin Barben studied at the Institute of Geography at the University of Bern, where he completed a dissertation on the assessment of methods for the estimation of rare floods in mesoscale regions. Today he works in the Hydrologic Basis Surface Water Section at the FOEN.
(photo: Martin Barben)

HADES Project Management, April 2017

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