International Cartographic Association
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Thematic mapping of mountain regions in the new web-based Atlas of Switzerland

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Keywords: mountain mapping, thematic maps, web atlas, map services

Abstract:

The Atlas of Switzerland was founded in 1961 as the Swiss national atlas. It was published in thirteen printed editions until 1997, comprising a total of 596 maps. From 2000 onwards, interactive digital versions were released (first on CD-ROM and later on DVD), which were widely praised for their intuitive user interface, interactive thematic maps and 3D visualizations. With version 4 (released in 2016), the atlas transitioned to a downloadable desktop version with an online data backend. It is based on virtual globe and 3D technologies. However, it still requires local installation and does not support mobile devices. The upcoming version 5 aims to overcome these limitations by running entirely in a browser.

The Atlas of Switzerland provides information on topics such as landscape and space, nature and environment, economy and energy, traffic and communication, society and culture, tourism and leisure time, history and future. In total, the Atlas presents over 400 curated thematic maps that are clearly explained and placed in a meaningful context. Maps can be explored spatially, thematically and temporally. Texts and graphics supplement the interactive maps.

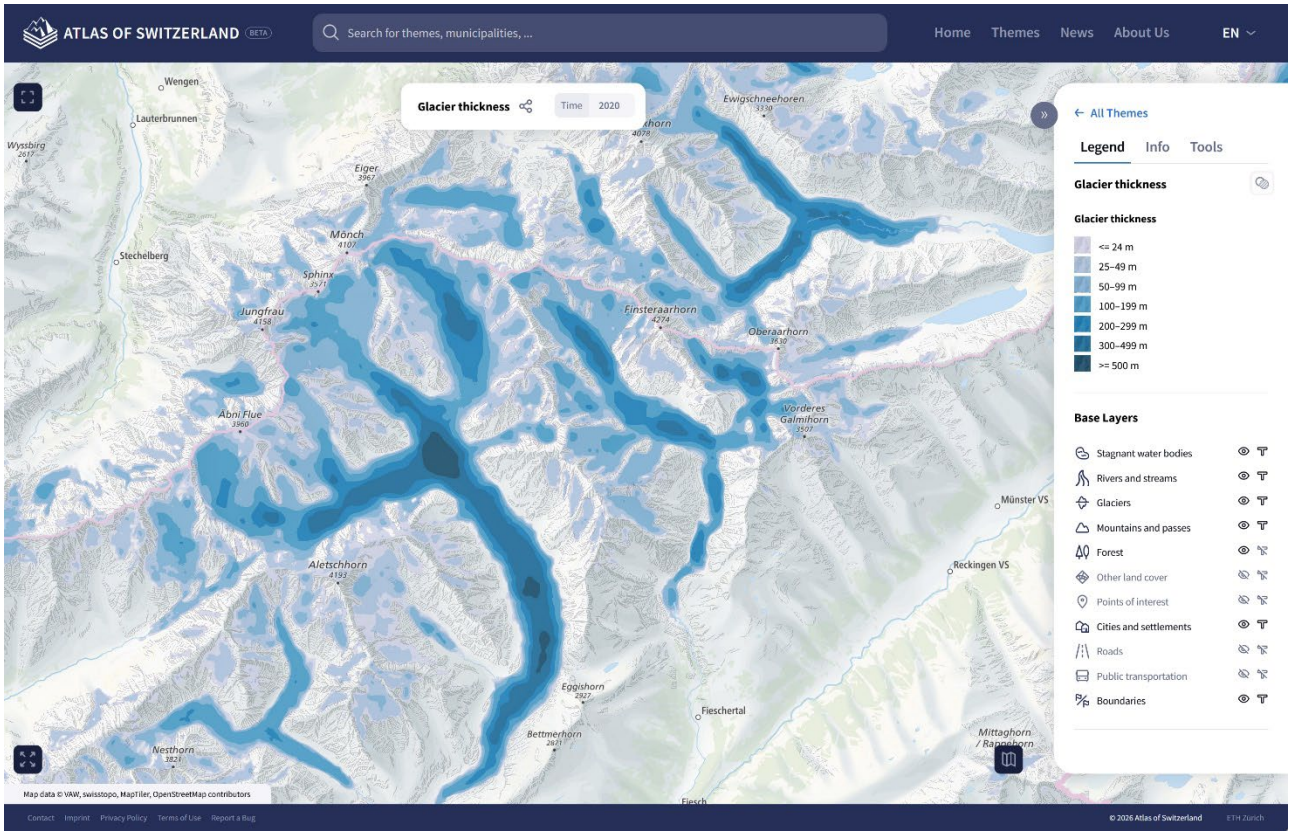


Figure 1. Glacier thickness, Atlas of Switzerland Web (Screenshot).

The Alpine region is severely affected by climate change. Several maps in the atlas address this topic, including those showing glacier thickness and retreat, new glacial lakes, the extent of permafrost, phenology, the development of forest altitudinal zones, the development of the zero-degree line, water-retention capacity, the degree of waterlogging, average annual evaporation, natural hazards, and land use and development (tourism, transport, settlements). Some maps show temporal developments from past recordings to future predictions and scenarios.

Multiple maps can be combined to examine conflicts of use between nature conservation, recreational activities, and energy production. Data from mountain huts is visualized alongside information on overnight stays. Other maps provide details of various outdoor activities, such as skiing and hiking.

Regarding renewable energy production, wind turbines are becoming increasingly important, particularly in exposed mountain locations where winds are stronger and more consistent at higher altitudes. The same applies to alpine solar power plants, as there is less fog and cloud cover at higher altitudes during the winter months. The locations and output of these renewable energy plants are visualized on several maps. The same applies to already existing and new hydropower plant projects.

All geo-data is carefully collected, checked, corrected, processed, generalized, designed, and uploaded to the web platform by a small editorial team. An expansion of the web version with 3D views is planned for the near future.

References

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