

Excursion of the Swiss Young Geomorphologists (SGmS)

## Fluvial geomorphology in the Swiss National Park

Excursion to explore the landscape of the lower Spöl river

5-6 September 2025



Photo : M. Bayens, 2025

**The 2025 autumn excursion of the Swiss Young Geomorphologists** took place in the Swiss National Park and its outskirts and was attended by 11 participants from the University of Lausanne, University of Fribourg, University of Zurich, University of Bern, ETH Zurich and SUPSI, as well as a friendly dog.

The excursion took place after the biennial conference of the Swiss Geomorphological Society (SGmS) in Zerne. After the public excursion of the SGmS in Val Muragl, we traveled to the Swiss National Park, where we enjoyed an excellent dinner of pizzoccheri and stayed overnight in the Hotel Parc Naziunal Il Fuorn. The following morning, we went on a wonderful hike in the Swiss National Park to Ova Spin, where the excursion officially began.



The first part of the hike in the Swiss National Park. Photo : L. Repnik, 2025

Accompanied by Marc O'Callaghan and Sophia Demmel, we then hiked along the Spöl river to explore the unique fluvial geomorphological processes in this area. The hydrogeomorphic dynamics of the river were altered by the construction of two dams in the 1960s. Since 2000, experimental floods have been carried out with the aim of restoring the natural dynamics of the Spöl river. The initiative is unique in Switzerland and allows the Spöl river to function as a live science laboratory, where the long-term effects of experimental flooding on river morphology and riparian vegetation can be studied.

The frequency and intensity of the experimental floods depend on the volume of water available in the hydropower reservoir and on the discharge of the Inn river, which must be sufficiently high to prevent sediment accumulation in the river confluence zone. The introduction of experimental floods has enhanced the hydrogeomorphic dynamics of the Spöl river, leading to an increase in the channel surface area. However, the significant sediment input from lateral tributaries still makes it challenging to restore the natural dynamics of the river and to establish a gradual vegetation transition between the channel and its banks.



Marc O'Callaghan explains the impacts of experimental floods on river morphology and riparian vegetation. Photo: C. Del Siro, 2025

## Links for further reading

### Experimental floods & SSC monitoring

- [Article, O'Callaghan et al., 2025: "Grow with the flow? Impact of Experimental Floods on Riparian Vegetation in an Alpine River"](#)
- [SNP article \(2024\): Experimental floods in the regulated Spöl river](#)
- [Droujko et al. \(2025\): Investigating suspended sediment dynamics in the Spöl and Inn rivers during experimental floods using high-resolution monitoring](#)
- [Agostini et al. \(2024\): Spöl River e-flood impact on the Inn River suspended sediment regime](#)
- [Zenodo Dataset \(2024\): Spöl Experimental Flood – Suspended Sediment Concentration](#)
- More to come at the Swiss Geoscience Meeting, 2025:  
[Provenance study of suspended sediments transported during experimental floods in the Spöl river](#)  
[Downstream selective sorting – fine sediment path length in the Inn River during the Spöl e-flood](#)

## PCB contamination (2016) and remediation (starting 2026)

- [SNP article \(2025\): Start of preparatory work for the Spöl remediation project](#)
- [SNP article \(2024\): Planned remediation works](#)

## Fish mortality in the Spöl due to sedimentation and disruption of residual flow (2013)

- [SNP article \(2014\): Environmental accident in the Spöl](#)  
A chronology of events is described at the very bottom of the page

### Organisers

Lea Schmid, Chantal Del Siro & Ben Robson

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