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# BIBOB – Cross-border beaver dam management in the context of climate change

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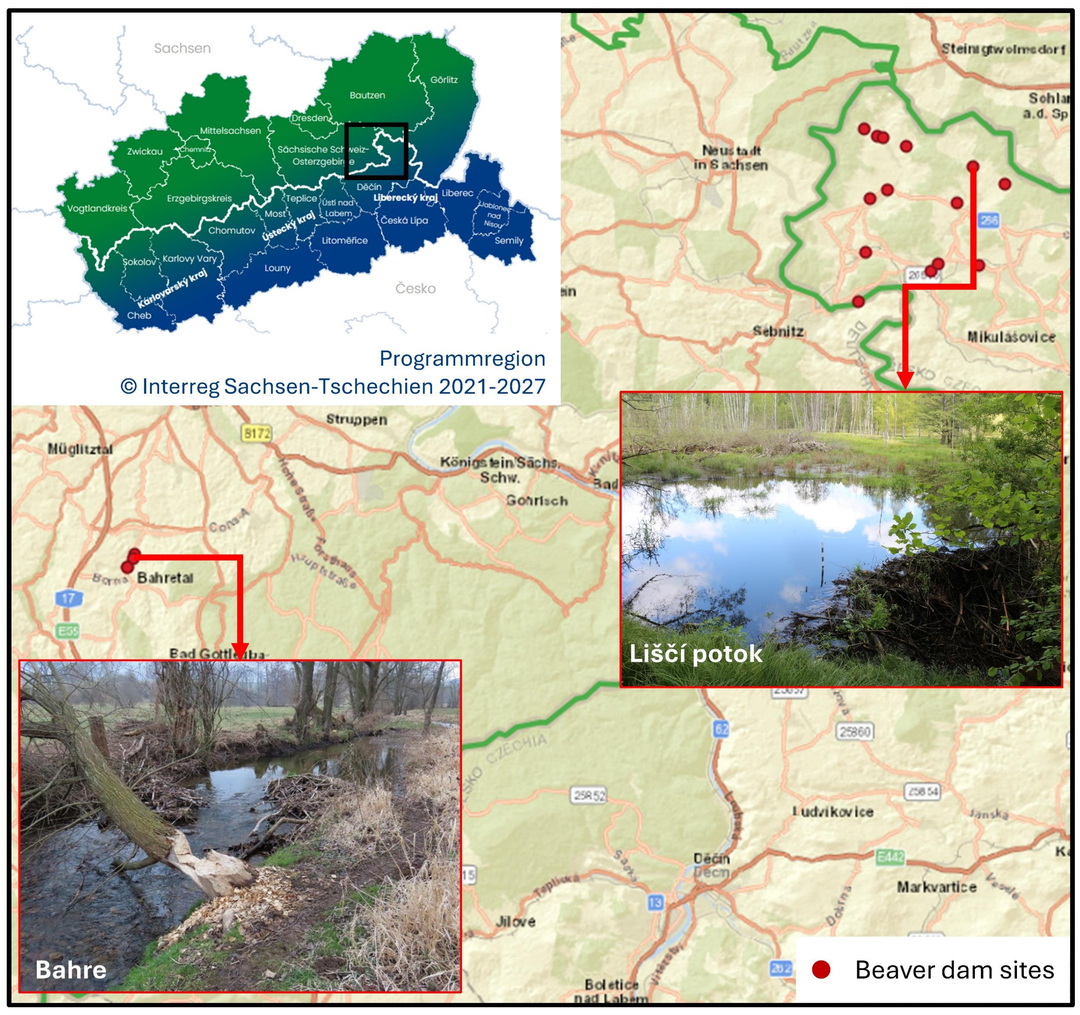
## Background

- The beavers' ability to dam water in rivers significantly alters hydraulic, hydrological, and ecological conditions up- and downstream of the dam locations.
- However, the extent to which these changes affect regional surface and groundwater conditions is often unclear.
- In cultural landscapes, this lack of knowledge complicates the work of environmental and water authorities when deciding whether beaver dams can be left in place or whether interventions are necessary.

## Objectives

- Assess the impacts of beaver dams on surface and groundwater dynamics
- Evaluate the positive and negative effects of beaver activities on hydraulic, hydrological, and ecological conditions
- Develop decision-making tools for local authorities and environmental agencies regarding the management of beaver dams
- Promote awareness and understanding of beaver dams' role in watercourse renaturalization and climate adaptation




Iinvestigated region of Saxon/Bohemian Switzerland and the studied beaver dam sites in Germany and Czech Republics

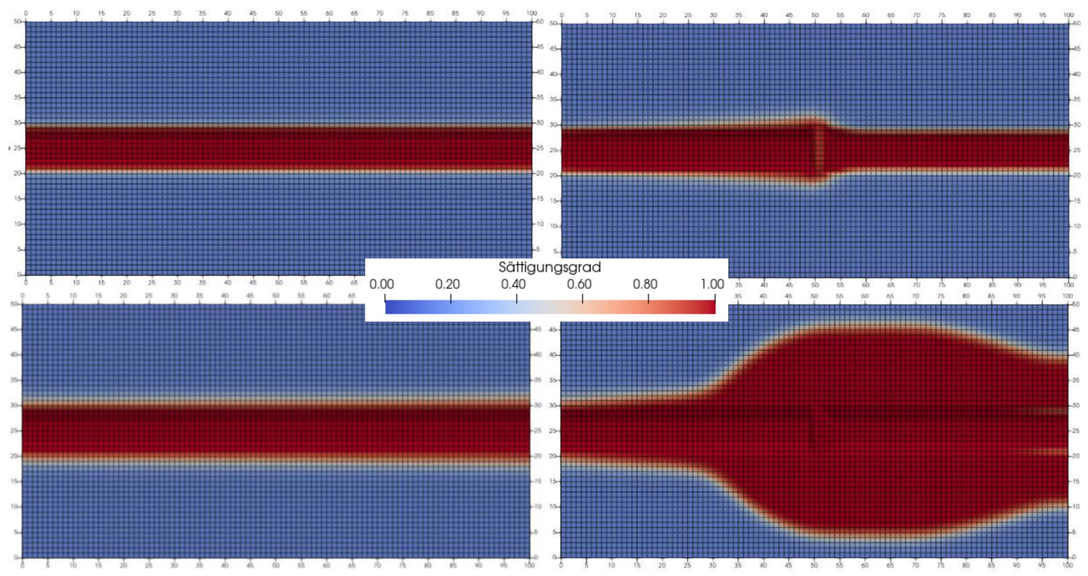
## Method

- Analysis of the status quo: legal basis and regulations, responsibilities, technical and non-technical options,
- Field surveys and monitoring ( at least 3 beaver dam sites):
  - Pressure sensors to record water levels and flow rates
  - Drones with thermal imaging and multispectral cameras to map topography, water regions, and flow pathways.
- Hydronumerical modelling of surface and subsurface flow in various runoff scenarios at selected beaver dam sites

Pressure sensor and camera installed upstream of the Lisci beaver dam

Beaver dam at Vilémov (top) and Sebnitz (bottom)

## Provisional results




Soil saturation (blue: unsaturated, red: fully saturated) without (left) and with (right) beaver dam at two runoff scenarios (Patzig, 2025)

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