

Master's thesis or Project work FS 2023



Versuchsanstalt für Wasserbau, Hydrologie und Glaziologie

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Refugia availability in dynamic river widenings

The wide range of restoration measures in channelized, morphologically degraded rivers includes dynamic river widening. This method is based on the reactivation of bank erosion, sediment redistribution, and channel shifting processes within certain spatial limitations (Fig. 1). The goal is to restore the morphodynamic processes typical for river-floodplain systems and to increase the diversity of aquatic and terrestrial habitats.



Fig. 1: River widening Augand, Kander River (Source: Tiefbauamt Kanton Bern, Oberingenieurkreis I, 2006)

In this thesis, field measurements at a river widening in Switzerland are to be conducted to set up a numerical model (software: BASEMENT). This model is then used to simulate different discharges and to evaluate resulting flow depths and velocities. The interpretation of this data together with information on habitat preferences of selected fish species allows the description of refugia availability in the river widening. The results will contribute to an improved understanding in the context of river restoration and refugia availability.

Contact:

Remarks:

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Field measurements and numerical model (no prior knowledge required) Project language: English 1 student for Master's thesis or up to 2 students for Project work