Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

Versuchsanstalt für Wasserbau,
Hydrologie und Glaziologie

Master's or Project thesis
Spring semester 2020

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Supervision: Dr. Davide Vanzo
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Quantification of flood-induced fish habitat changes in an Alpine river

The dynamics of river morphology plays an important role in habitat use of fish. On June 2019 a secular flood event occurred in the Moesa River, Canton Graubünden, which completely reworked the river topography in several reaches. A high-resolution topographical survey is available for the pre- and post- flood condition of one such reach. An electrofishing campaign (Fig. 1, left) to map what type of areas are used by fish was also conducted. By means of this dataset, the main goal of the thesis is to model and quantify the physical habitat variation (Fig. 1, right) due to the secular flood. The investigation is composed of two main parts: first different discharge conditions will be modelled with BASEMENT for both the before and after flood conditions. In the second part a newly developed mesohabitat analysis based on the output of the numerical model runs and the biological model, will be applied to quantify the amount and location of suitable habitat under the different discharge conditions for both topographies.

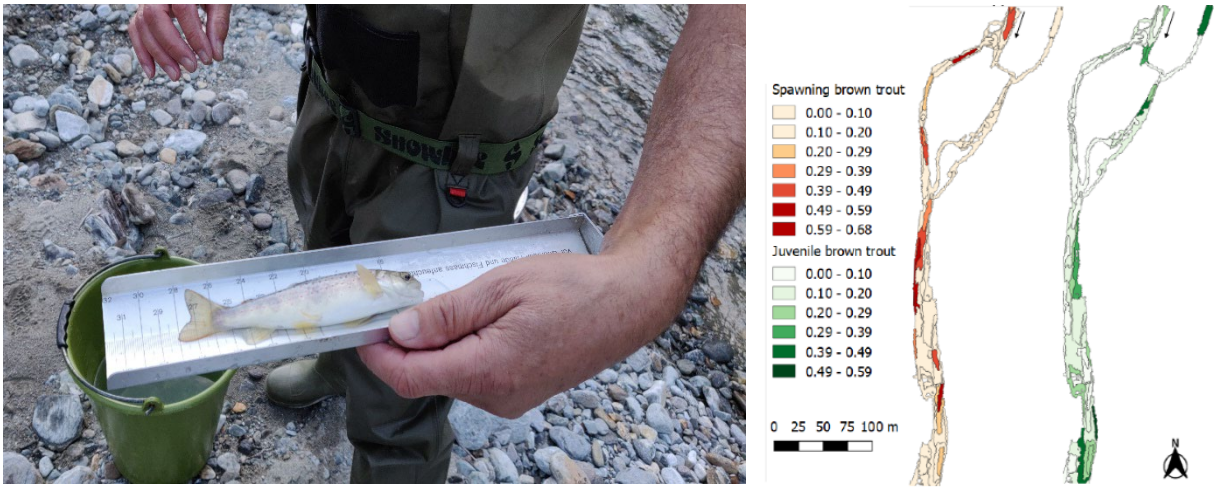

Fig. 1: left: measurement during electrofishing campaign; right: example of habitat modelling output

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Notes: Correspondence and report/thesis in English;
Either for single Master or Project thesis (2 persons)