

# Effect of flood inundation on endangered lichen in a dynamic riparian habitat

Many riparian species are nowadays endangered because of the multiple stresses impacting riparian habitats. The *Stereocaulon incrustatum* (Fig. 1) lives in dry, stable, and nutrient-poor gravel substrates typical in gravel bed river systems. This species is listed as endangered in Switzerland and subject to protection measures. Although little is known about distribution and colonization of such species, it is acknowledged that floods have positive and negative effects on this type of lichen. On the one hand, floods allow the species to be dispersed and colonize newly formed gravel banks. On the other hand, they may rework the riverbed, removing existing populations.



Fig. 1: Maggia river floodplain (left) and the lichen *Stereocaulon incrustatum* (right)  
(Source: Hirschler C.M. et al. (2023), doi.org/10.55419/wsl:33592)

The scope of this project is to quantify the flooding area and the threshold of sediment motion at different discharges of a reach of the Maggia river near Someo (Fig. 1) and link them to an existing dataset of *Stereocaulon* presence or absence. The project requires to setup and run 2D numerical simulations with BASEMENT and use GIS tools to retrieve data on lichens.

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**Remarks:** Part of [TiRiLab](#) project.  
Research-oriented thesis. Prior attendance of River Morphodynamic Modelling course is preferred