

## **Comparative analysis of epilithic microphytic communities from an Upper and Middle Danube River section (Austria – Croatia)**

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**Master Thesis /Abstract**

Epilithic microphytic communities from twelve habitats were studied, of which ten are situated in the Upper Danube section (Austria) and two in the Middle Danube section (Croatia). The physico-chemical water properties were estimated, as well as the epilithic biomass, qualitative and quantitative structure of the algae and cyanobacteria in the epilithon. The comparison of microphytic communities from habitats with similar local settings from the two Danube sections confirmed that the present communities highly differ in terms of biomass, as well as in their qualitative and quantitative structure. The Upper Danube showed better conditions for the accrual and development of epilithic microphytes. The Middle Danube microphytes, on opposite to Upper Danube's, were clearly diatom dominated and characterized with low biomass. The epilithic communities situated on habitats with different local settings within the Upper Danube primarily confirmed the presence of a distinguishable succession pattern from tightly attached, early colonizer to filamentous, mature microphytic communities. Small prostrate algae with low biomass characterized the early succession phase, while the more mature communities showed a tendency to a community dominated by filamentous cyanobacteria and/or green algae with higher biomass values. Those results suggest that the microphytic succession depends on the physical substrate stability of a habitat. To clearly confirm the existence of such a relationship more precise future investigations are needed.