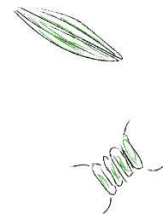




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ABSTRACT BOOK



SS3_O13_Characterisation of a rock glacial stream under a multitrophic approach

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In the Alps, the glacier imprint on stream hydroecology is fading due to progressive retreat, and permafrost is increasing its influence due to the slower response to air warming. Streams fed by rock glaciers have been recently addressed as distinct ecosystems where the thawing ice exerts a key role in shaping the physical and chemical conditions of the habitat. This contribution presents the preliminary findings of a study conducted in the European Alps (Solda valley), where the outflow of an active rock glacier was characterised in terms of habitat conditions, dwelling communities, food web and ecosystem functions under a multitrophic approach. Despite the harsh habitat setting in terms of permanent low water temperature (< 1.4°C), high water transparency enhancing UV penetration and high concentrations of trace elements, the stream supported rich and diverse microbial, diatomic and invertebrate communities. Extensive bryophyte mats favoured the retention of abundant organic detritus, and primary production (Chl-*a*) and epilithic biomass exhibited values comparable to non-glacial streams. This abundance of autochthonous resources supported a complex food web, that includes three trophic levels represented by primary producers, primary consumers and predators. The functionality of the community was reflected in the breakdown rates of organic matter, which was unexpectedly high and comparable to that of non-glacial streams. The study supports previous findings on the distinctiveness of rock glacier outflows in terms of habitat setting, and provides a first synthesis on the role of such streams in shaping biodiversity and ecosystem functions in catchments experiencing drastic glacier retreat.

