

A model for the prediction of POP bioaccumulation in a glacial fed stream ecosystem

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Abiotic and biotic (macroinvertebrates) samples were collected in a glacial-fed stream in Northern Italy Alps on a monthly basis from May to October 2006.

The macroinvertebrate community was taxonomically and functionally characterised. These information allowed the identification of a number of “key stone species”. Physiological and ecological parameters of key stone species were defined and used to parameterize a dynamic bioaccumulation model, previously developed for lentic ecosystems.

Two different scenarios were defined to understand and quantify bioaccumulation phenomenon. The steady state scenario (keeping constant during time the exposure and the macroinvertebrate community characteristics) was used to calibrate and assess the bioaccumulation factor (BAF) for the “key stone species”. The dynamic scenario was built considering exposure levels and many biological parameters variable with time, in order to investigate, in a complex scenario, the bioaccumulation pattern through the different trophic levels.

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