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The impact of water abstraction on the aquatic ecosystem in the river Oplotnica, Slovenia

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The impact of water abstraction for the hydroelectric plants on the hydromorphological, physical and chemical parameters as well as on the community structure and relative abundance of periphyton was estimated in the Oplotnica river in 2007. The sampling sites were selected upstream and downstream of the hydroelectric plants. The results showed changes of hydromorphological parameters on sampling sites affected by water abstraction. Water depth and water velocity decreased on sampling sites affected by water abstraction. Water abstraction influenced also wetness of the riverbed and composition and rank of substrata in the riverbed. Physical and chemical parameters did not change a lot, only water temperature was higher on the affected sampling sites. Species composition and relative abundance of periphyton did not altered along the river to a large extent. Smaller differences in species composition and relative abundance of periphyton were noticed due to different types of aquatic habitats. The predominant group of algae were Heterokonthophyta. Bray-Curtis coefficient of similarity demonstrated periphyton community more time than place dependent. Pantle-Buck Saprobic index classifies Oplotnica river in the I. and I.-II. quality class.