EGU24-20692, updated on 25 Sep 2024
https://doi.org/10.5194/egusphere-egu24-20692
EGU General Assembly 2024

CS4Rivers: a transdisciplinary approach for monitoring freshwater habitats and their biodiversity.

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Freshwater ecosystems are crucial for life on our planet. These habitats are home to 10% of all known species, including a third of all vertebrates. In the last decades, most of the world's freshwater ecosystems have suffered dramatic changes and negative impacts mainly due to anthropological activities and global warming. The assessment of riverine habitats quality could be helpful to preserve (or restore) freshwater ecosystems and to counteract biodiversity loss as well. Citizen Science is increasingly adopted in environmental monitoring projects. The increase in spatial and temporal resolution is just one of the strength points of participative projects: these can provide additional data for research purposes and monitoring agencies. In this context, a new CS-based research project called *CS4Rivers* has been created by the University of Siena and developed within the NBFC - National Biodiversity Future Center. *CS4Rivers* aims to monitor the biodiversity and the river habitats quality by using a transdisciplinary approach. During the project, several monitoring activities will be carried out: the freshwater chemical quality, the riparian vegetation, the macroinvertebrates, and the biodiversity target species in the fluvial corridor. For each activity, ad hoc sampling and monitoring protocols have been developed. Monitoring activities will be held on the Ombone River and its tributaries (Siena and Grosseto provinces, Tuscany, Italy). The project will last until December 2025. A pilot project has been already launched on the Idice River (Emilia-Romagna region, Italy). Future perspectives of this project will regard the export in national and international context of the transdisciplinary approach adopted in *CS4Rivers*.