

Issue 1/2023

Restored floodplains could remove 38.000 tons of nitrate pollution in the Danube river basin

Reconnecting cut-off water bodies and floodplains with the Danube River and its tributaries could aid nitrate removal and contribute to water quality improvements, shows a new large-scale modelling study.

Nitrogen emissions in the Danube river basin are currently estimated at around 500 000 tons per year, with 44% deriving from agriculture, 30% from urban areas and 23% from forests and natural areas. About 340 000 tons enter the Black Sea, into which the Danube drains. The river basin contains 7 845 km² of active floodplains (inundated at least every 100 years), and 1 440 km² which could be reactivated by hydromorphological river restorations (which consider the physical character and water content of water bodies), amending dykes, or changing land use. In this study, the researchers concentrated on six sections of the Danube and its tributaries – Sava, Tisza and Yantra – comprising 3 842 km² of active and 1 298 km² of potential floodplains larger than 500 hectares (ha).