

RESPONSES OF AQUATIC MACROPHYTES TO RESTORATION OF THE LOWER RHINE

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Rehabilitation measures in the River Rhine have resulted in improved water quality and a more natural morphology of floodplains. Both may have been beneficial for aquatic plant communities in the river and in water bodies in the floodplains. We examined patterns of occurrence of macrophytes in the Lower Rhine branches in the Netherlands.

Aquatic macrophyte occurrence is strongly limited under the extreme hydrological fluctuations of the river channel. As a result, only few macrophyte species have been observed growing in the main channels, and the numbers increase in the less dynamic parts near weirs, in the lower (estuarine) reaches and in water bodies in the floodplains that are only connected during floods.

Restoration projects in the floodplains have produced many new water bodies, which may have a very rich macrophyte vegetation, in particular in the initial stage after construction. In further stages of development, the succession may either lead to a type of clear, macrophyte-rich floodplain lakes, or to the turbid, phytoplankton-dominated type. It is considered that the succession of floodplain lakes might be directed to either of these types by landscape design.