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Microhabitats of a threatened freshwater mussel in gravel-bed rivers (Belgium).

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Physical microhabitat descriptors are important to predict species habitat and therefore, are critical to river management as a mean to identify and manage habitats of aquatic fauna. Flow velocity, water depth and substrate constitute the fundamental microhabitat of benthic macroinvertebrates. The thick shelled river mussel (*Unio crassus*) is an endangered European freshwater mussel. The species and its habitat are protected in Europe by Council Directive 92/43/EEC (Annexes II and IV) on the conservation of natural habitats and of wild fauna and flora. Therefore, Member States must establish conservation strategies for this species. In this context, microhabitats of the thick shelled river mussel are mapped in several Belgian rivers, along with the use of the microhabitat by the species. For each microhabitat descriptor i.e., bathymetry, flow velocity, and substrate grain size, a habitat suitability index is computed. Habitat suitability index is defined as the ratio of the species' use of a microhabitat to its availability. Optimal microhabitat is defined as the microhabitat having to highest frequency of use by mussels. Each shell is measured to detect size-related differences in microhabitat use. The hydromorphological preferences of the threatened mussel are thus identified which will allow the development of habitat suitability criteria for the adult life stage of the species.