

Invertebrates and algae – small in size but an important component in ecosystem function and river basin management

Editorial

Dear Reader

Who is not familiar with fishes as obvious inhabitants of streams and rivers? Some like fish only to have a good meal, some are fishing professionally or as a hobby, others simply like to watch them when staying in the current. However, not so many people know how fish live, what habitats they use and what food they need. In this issue of DANUBE NEWS we deal with some fish food animals and plants. Since these are small in size and mostly living in the bottom of running waters, they usually are not seen. I invite you to follow a short introduction into the benthic life, and to read more about a few selected examples which elucidate the general picture.

Aquatic ecosystem function is mostly based on a large biodiversity, i.e., a great number of species and individuals with a specific function in the food chain or pyramid that starts with bacteria and algae at the bottom, continues through benthic animals like insect larvae, crustaceans, worms and molluscs and ends with top predators like fish, birds, mammals and humans. The key words are production (by algae), consumption (by animals) and decomposition (by bacteria) – life, growth and death interlinked in a very complex spatial network of longitudinal river continuum, lateral connectivity with riparian land and vertical gradients into the groundwater. According to the way how food is gathered and ingested by macro-invertebrates (benthos), we distinguish between “shredders”, “filterer-collectors”, “gatherers”, “grazers”, “scrapers”, and “predators”.

The contributions of this volume focus on the Danube (black flies, crustaceans, algae), the Tisza (mayflies) and a lake near Osijek (macrophytes) but address also the problems of reintroduction to and invasion from other rivers. This means that rivers such as the Danube are not closed systems, and that ecosystems are sometimes interlinked over long distance. In this respect, it is of utmost importance to prevent isolation of ecosystems, to open river corridors and to respect migration behaviour not only of fish, but also of benthos and plants. Restoration of morphological structures

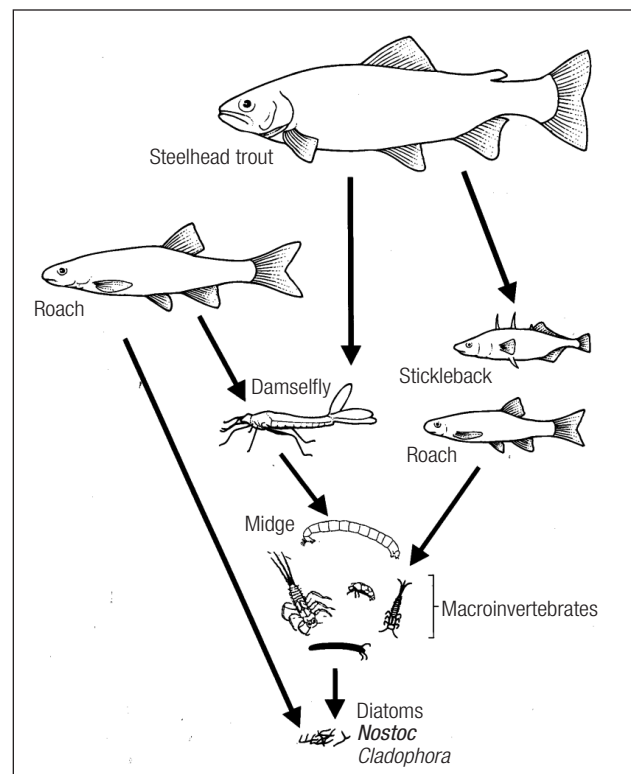


Figure 1. An illustration of the trophic cascade on boulder-bedrock substrates in riverine pools. Insect larvae graze on algae and are eaten by predators like damselflies and various fish. From J.D.Allan (1995): *Stream Ecology*. Chapman & Hall, London

provides habitats. Reintroduction programs intend to restore ecosystems by increasing biodiversity. And combating neozoans (exotic species) protects the native flora and fauna and their intense functional network.

Conservation can only be performed if we have scientific knowledge about biodiversity and ecosystem function, but similarly important is public awareness and a common interest for nature. I hope the presented articles can rise interest to explore nature and stimulate further reading and learning towards an understanding of our environment.

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Hydrological catchment of the River Danube



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