

FUNCTION AND THREATS OF MUSSELS, SNAILS, AND CRAYFISH IN THE RIVER ECOSYSTEM – AN INTERNATIONAL SYMPOSIUM IN CRIEWEN (GERMANY)

CONFERENCE REPORT

The German-Polish educational centre ‘Schloss Criewen’ is particularly active in the sphere of wetland and riparian protection. The centre also promotes cross-border cooperation in environmental protection. I have visited this location in Western Pomerania as an invited speaker three times during my scientific career. While at the heart of the National Unteres Odertal, my thoughts often turn to the topic of when the Lower Oder Valley Landscape Park on the Polish side of the border will gain national park status. Apparently, this milestone is already within reach. It seems the Oder River disaster of 2022 has

prompted decision-makers to act. A committee has finally been established to create a national park on the Polish side of the Oder.

In the summer two years ago, mass media outlets reported a large-scale fish die-off along nearly three-quarters of the Oder River. However, few recognised that the silent victims of this tragedy included freshwater mussels, particularly unionids, which were affected by the dangerous toxin released by golden algae. It was not only adult mussels on the riverbed that were perishing; juvenile mussel larvae (glochidia) were also being lost. The symbiotic rela-



Fig. 1. The participants of the symposium in Criewen. Photo: DIRK BÖHME

tionship between fish and mussels, crucial for larval metamorphosis, was disrupted. Without fish, no new generations of unionid mussels can arise.

This event served as a catalyst for addressing the role and threats facing large aquatic invertebrates and became the impetus for organising the conference in Crieven (Germany) on 7–8 November 2024. I attended at the invitation of Ms UTA BÖHME from the Brandenburg Academy. The event was held in collaboration with the Institut für Binnenfischerei e.V. Potsdam-Sacrow and the Naturkunde Museum in Stuttgart, with financial support from Brandenburg.

The conference drew a significant number of participants, including scientists, professionals from expert institutions, national parks, fishing associations, specialised companies, and students. Attendees represented Germany (62 people), Luxembourg (1), Austria (1), Poland (7), and the Czech Republic (2) (Fig. 1). During the symposium, 17 oral presentations were delivered: 10 focused on freshwater mussels, two on freshwater snails, and five on crayfish in inland waters. Notably, the conference was simultaneously translated into German, Polish, and English.

In their presentations, speakers emphasised the ecological significance of freshwater bivalves, highlighting that healthy mussels are indicative of healthy

ivers and healthy human populations. They stressed that it is not only sudden, dramatic, and emotionally charged events, such as the Oder River disaster, that harm freshwater bivalve populations. Natural factors also inhibit their growth and reproductive success, such as parasites and pathogenic microorganisms, which can lead to mass mortality. Additional threats include climate change, rising water temperatures, drying rivers and reservoirs, as well as environmental transformations caused by human activity, such as river regulation, destruction of riparian vegetation, drainage, concreting of water banks, and dam construction. Furthermore, water pollution (industrial, agricultural, and pharmaceutical), coupled with competition from non-native species, significantly diminishes the viability of these molluscs.

What does the future hold for freshwater mussels? Artificial reproduction is expected to be employed in some areas. However, protecting these species requires targeted habitat restoration measures, better water quality monitoring, combatting invasive species, and increased political and financial commitment. EU-funded projects, such as LIFE, are promising, supporting the restoration of endangered species like the thick-shelled river mussel (*Unio crassus* species complex). The MARA pro-



Fig. 2. The European bison in the Crieven park. Photo: MACIEJ BONK



ject (*Margaritifera* Restoration Alliance), dedicated to the freshwater pearl mussel (*Margaritifera margaritifera*), received the UN Project of the Decade award in 2024. International and interdisciplinary cooperation, alongside educational engagement, remains invaluable. Local-level nature education and public awareness initiatives significantly contribute to mollusc conservation.

An additional highlight of the conference was an excursion to the bison enclosures (Fig. 2), led by Dr

ANSGAR VÖSSING (Director of the Lower Oder Valley National Park Foundation), followed by an evening piano concert.

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