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Conference Abstract

An (inter)national network to support the FishBase Consortium in parasitology, pathology, ichthyo(parasito)logical mainstreaming and capacity development

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Abstract

FishBase, a global biodiversity information system on finfishes (www.fishbase.org), is a knowledge resource for the management and conservation of fishes. It is the largest and most frequently accessed online database on fishes. This multifunctional ecological tool, widely cited in scientific publications, reached the top 1% of all cited items published in the 21st and 20th centuries. Recently, it attracted >1200 citations/year in the peer-reviewed literature. FishBase receives ca. 80 million hits/month (2023) and up to 1 million visits from over 300 000 unique users monthly. The FishBase Consortium scientifically guides the development and functioning of FishBase and SeaLifeBase (www.sealifebase.org), a similar information platform for marine organisms other than fishes with a focus on policy-relevant species. FishBase is an intensively used resource in fish parasitology, rendering parasitologists among the users most frequently citing FishBase. Conversely, the FishBase tools that pertain to fish parasites and diseases are

underdeveloped compared to other applications within the database. Hence, parasitologists mainly use FishBase to find information on fishes but not on parasites. They rarely contribute data themselves to FishBase, and new fish-related results in parasitological literature go largely unnoticed. This also relates to, and exacerbates, the limited extent to which biodiversity databases of hosts and their pathogens are, in general, interoperable. FishBase and comparable informatics resources for aquatic biodiversity, such as the World Register of Marine Species (WoRMS), and the Freshwater Animal Diversity Assessment (FADA), mostly inaccurately reflect host-parasite relationships. The information they contain on aquatic parasites is far from complete. Fish parasites constitute risks because of their potential pathogenicity towards their hosts, while also providing important ecosystem services to their hosts and ecosystems, e.g., related to the development of immunity, the regulation of energy fluxes and populations, and the maintenance of species-richness. Parasites are especially abundant, diverse, and impactful in ecotones such as wetlands. Lack of accessible information on the parasites of fishes, therefore, is a limitation to the management and conservation of wetland fishes in situ and ex situ. The principal investigators of the Aquatic Biodiversity team at Hasselt University focus on fish parasitology, ichthyology, wetland monitoring, and the management of aquatic ecosystems. In collaboration with the Royal Belgian Institute of Natural Sciences, an observer within the FishBase Consortium, they initiated and obtained funding for a network of national and international partners to support the FishBase Consortium in:

1. updating information on host-parasite links underlying parasitological and pathological tools within FishBase, and expanding these tools for diagnostics;
2. mainstreaming information on fish (parasites) in response to priorities proposed by stakeholders; and
3. developing (inter)national ichthyo(parasito)logical capacity through training and awareness raising.

This project builds on the expertise of 22 Flemish and 48 international partners, encompassing stakeholders from universities, natural history institutions, other governmental research institutes, public aquariums, and the policy, non-profit and private sectors. Referring to empirical data on, e.g., the weatherfish *Misgurnus fossilis,* we hope to grasp this short introduction to our project as opportunity to hear from the audience how our approach can contribute to understand and conserve European wetland fishes.

Keywords

biodiversity informatics, capacity building, data science, fish parasites, SeaLifeBase

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Conflicts of interest

The authors have declared that no competing interests exist.