infraFADA:

Upgrading the taxonomic backbone of global freshwater animal biodiversity research infrastructures

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Freshwaters are among the most **threatened ecosystems** worldwide, because of human impacts and resulting climate change, with their **biodiversity declining** much faster than in the marine or terrestrial realm. Although unfrozen freshwater covers less than one percent of the Earth's surface, ten percent of all animals occur only in freshwater habitats, which emphasizes the **urgent need for conservation** measures in these ecosystems.

infraFADA (2023-2026) is a joint project between the coordinating institute, the Royal Belgian Institute of Natural Sciences (RBINS, Brussels, Belgium), and the University of Natural Resources and Life Sciences, Institute of Hydrobiology and Aquatic Ecosystem Management (BOKU, Vienna, Austria) funded by BELSPO (The Belgian Science Policy).

The project aims to provide **updated global taxonomic lists** (species, genera) on freshwater animals collated and curated by **taxonomic experts**. The global Freshwater Animal Diversity Assessment (FADA) checklists will be made available to the public in **open access** and can be used by scientists or different stakeholders. They will serve as **taxonomic backbone** for a variety of global biodiversity infrastructures.

History

The initial **Freshwater Animal Diversity Assessment (FADA)** project emerged more than 20 years ago in the context of the international decade "Water for Life". One of the major challenges was to provide a global assessment of freshwater animal biodiversity to help define conservation strategies and priorities.

About 60 leading taxonomists were involved in assembling a team of close to **150 experts** who had to gather information globally on **species and generic diversity** for each animal group, as well **as zoogeographical distribution** and endemicity.

These preliminary results identified more than **125.000 species and more than 11.000 genera**. These results were published in 59 chapters of a special issue of the international journal Hydrobiologia for which the summary chapter was cited more than **750 times in Google Scholar**.

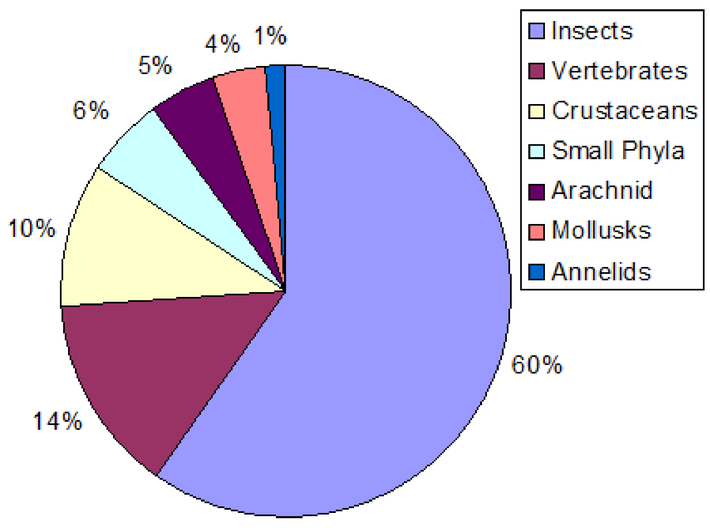

Figure 1. Outcomes of the first Freshwater Animal Biodiversity Assessment

The new infraFADA

Taxonomy is a living scientific discipline where new taxa are being described and existing taxa are being placed in new taxonomic positions. Therefore, after one and a half decades of relative inactivity, FADA needs to be upgraded, both technically and with regard to content.

infraFADA will provide updated global **taxonomic lists** (species, genera) on **freshwater animal diversity** provided by **experts** and **available to all** in open access according to the **FAIR principles**. infraFADA is rebuilding the FADA consortium of taxonomic experts and is developing a new set of tools, FADAtims, to allow the experts to enter new data in the taxa lists and to allow extraction of this information.

infraFADA will also serve as **a taxonomic backbone** for other global biodiversity **data infrastructures**, such as the Catalogue of Life (CoL), the Global Biodiversity Information Facility (GBIF), the Freshwater Information Platform (FIP), and others. We are currently working with other database management teams, such as members from WoRMS and TaxonWorks, to allow the bilateral flow of information between our databases.

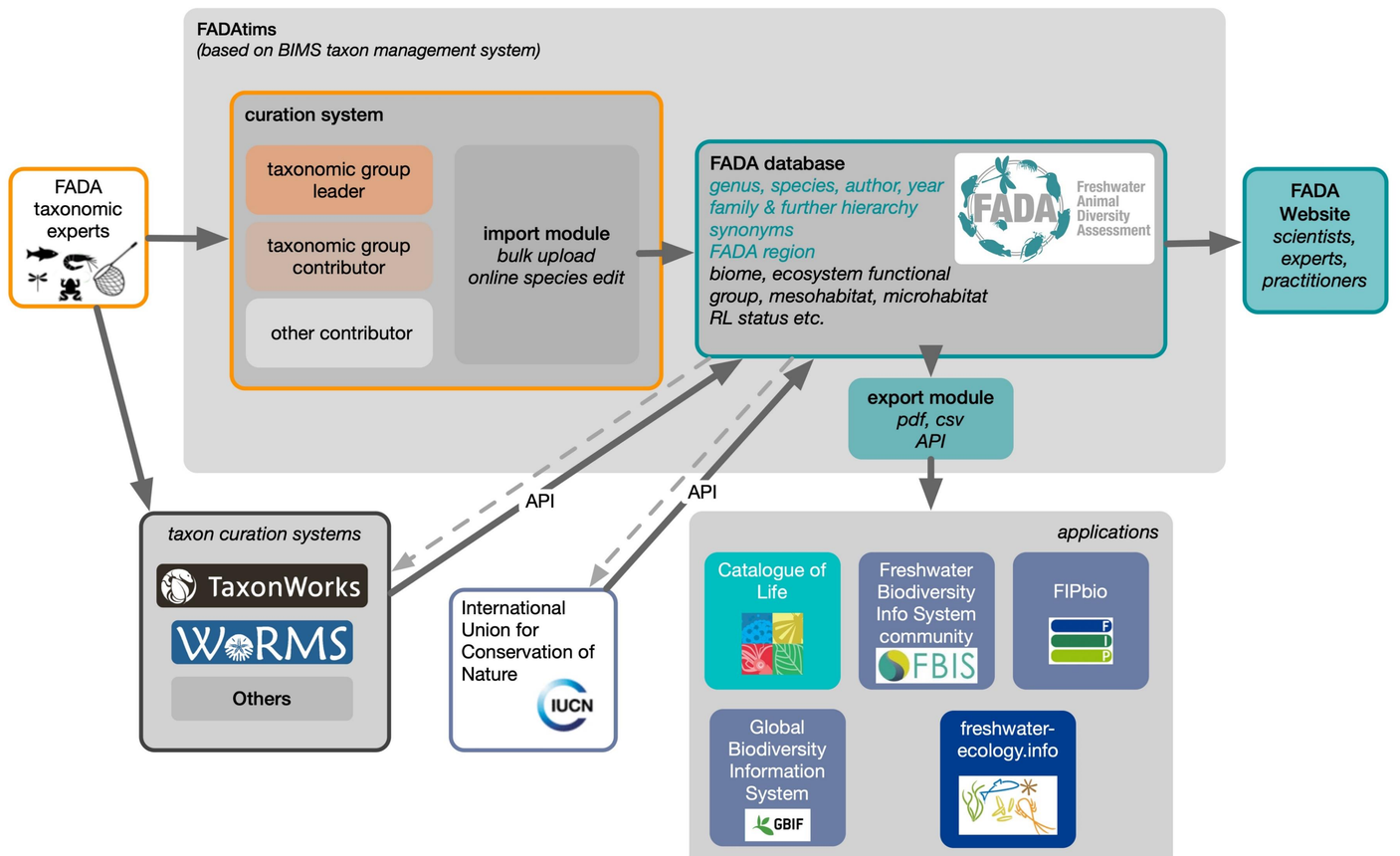

Figure 2. Interoperability between FADA and other infrastructures

infraFADA will provide a **digital and living heritage** of freshwater data, building bridges between **science and society** and helping to sustainably maintain freshwater resources.