

Memorandum of understanding

on the data and information exchange between the FADA and WoRMS/Aphia database

between

the Royal Belgian Institute of Natural Sciences,
Operational Directorate Natural Environment (OD Nature)

and

The Steering Committee of the World Register of Marine Species (WoRMS), represented by the
Flanders Marine Institute (VLIZ)

The Parties

OD Nature (Operational Directorate Natural Environment) acts as a Centre of excellence in fundamental and applied research of biodiversity and ecosystems in support of the protection and sustainable management of the natural environment. Collaborators (100+) are spread over 3 locations in Brussels and Ostend. They have a large and diverse expertise and a strong reputation in their fields that include ecology, molecular biology, nature conservation and protection, biodiversity, chemistry, hydrodynamics, modelling, databases and image processing. This expertise is applicable to terrestrial, freshwater and marine environments worldwide.

The FADA – Freshwater Animal Diversity Assessment database is a freshwater taxonomic checklist database managed by OD Nature. The FADA initiative was initiated through funding by the Belgian Science Policy Office (Belspo), with the aim to provide an overview of the specific and generic biodiversity in freshwater environments. FADA organized a targeted workshop with ca. 150 taxonomists and this resulted in a special volume of *Hydrobiologia* (vol. 595, 2008), documenting an almost complete overview of the diversity of around 65 aquatic higher taxonomic groups. In collaboration with the Belgian Biodiversity Platform, this also initiated the creation of a database with freshwater checklists, which is accessible through the fada.biodiversity.be website. This database was further extended by OD Nature during the EU FP7 project BioFresh (Biodiversity of Freshwater Ecosystems: Status, Trends, Pressures, and Conservation Priorities), which uses it as taxonomic backbone for its data portal, and the Belspo BRAIN project AquaRES (Aquatic species Register Exchange and Services – odnature.naturalsciences.be/aquares), which initiated the establishment of this MoU.

The Flanders Marine Institute (VLIZ) is a not-for-profit, largely government funded organisation based in Oostende (Flanders, Belgium). VLIZ acts as the coordination and information platform for marine and coastal-related scientific research in Flanders and serves as an international contact point. The Data Centre Division provides assistance, technologies and tools to scientists and policy makers to support marine data management. Within international networks, VLIZ participates in the development of data infrastructures and promotes the flow of marine data from Belgium. The Data Centre is a world leader in managing biodiversity data, and is part of the World Data System of the International Council for Science (ICSU). In particular, VLIZ has built-up expertise in taxonomic data management through the hosting of the World Register of Marine Species (WoRMS) and related taxonomically-oriented databases.

WoRMS – including its subregisters – is managed by the WoRMS Steering Committee (WoRMS SC), who represents the editors in all matters relating to the databases, including liaison with other (international) programs, projects and initiatives concerning the databases, in close collaboration with the WoRMS Data Management Team (WoRMS DMT). They are responsible for the scientific correctness of the database, and for identifying data & editor gaps. WoRMS itself is part of the Aphia platform, an infrastructure designed to capture taxonomic and related data and information which includes an online editing environment. Aphia is hosted and managed at the Flanders Marine Institute (VLIZ) and is an integral part of the LifeWatch Taxonomic Backbone (LW-TaxBB), which is a central component of the European LifeWatch project.

Introduction

This Memorandum of Understanding recognises the existing collaboration between both parties within the scope of the BRAIN AquaRES (Aquatic species Register Exchange and Services) project and aims to consolidate this collaboration beyond the projects' term. The AquaRES project aimed to improve the data exchange between the Freshwater Animal Diversity Assessment (FADA; fada.biodiversity.be) database and the World Register of Marine Species database (WoRMS; www.marinespecies.org), maintained respectively by OD Nature and the Flanders Marine Institute.

This Memorandum of Understanding (MoU) provides the basis for OD Nature and the Flanders Marine Institute to work together to develop and share critical biodiversity information and infrastructure. In particular, the Flanders Marine Institute will allow OD Nature to access one of its databases through download files and web services, namely the World Register of Marine Species (WoRMS), and to re-format the selected freshwater information for use in the Freshwater Animal Diversity Assessment database and website, and the Freshwater Biodiversity Data Portal. In return, OD Nature will provide the Flanders Marine Institute access to its Freshwater Animal Diversity Assessment database for use in the AquaCache tool, the World Register of Marine Species (WoRMS) and its Aphia database system.

Objective of this MoU

To establish a framework for co-operative working between the ongoing OD Nature and VLIZ programs related to taxonomic checklist databases. This includes for instance:

- Encouraging taxonomic editors to provide information on the environment (marine/brackish/freshwater/terrestrial) of the taxa and include taxa in their checklist which occur in other environments than the focus environment of their checklist, where these constitute a small minority of the number of species (e.g. include the few marine insects in the freshwater focussed FADA checklist).

- Providing standard, detailed and referenced information from their databases. This includes providing the necessary license, rights and citation details as outlined in the conditions of use section below.
- Developing a mechanism whereby both parties can easily access and reformat agreed upon content. This format for data and information exchange corresponds to what has been agreed during the BRAIN AquaRES project (odnature.naturalsciences.be/downloads/aquares/DwC-AquaRES_field_selection-v1.xlsx). Changes to this exchange format can be applied after mutual agreement of both parties.
- Considering the World Register of Marine Species, hosted by and managed at VLIZ as a key provider of data on marine information and OD Nature FADA as a provider of freshwater information, ensuring that key credit and attribution metadata are displayed prominently for all data originating from the corresponding initiative. Evaluation of data to be incorporated in the respective databases will be done on a group by group basis and after contacts between the data management teams and the involved taxonomic experts.

Conditions of Use

1. Both parties agree that they will clearly label the source of all content and require users to indicate those sources in any subsequent re-use. Both parties will require the citation of the information as follows:

- a. WoRMS data integrated in FADA:

- [Editor(s)] ([Year]) WoRMS/Aphia [Dataset name]: [Checklist name] World Wide Web electronic publication. Available online at [http://fada.biodiversity.be/group/show/\[FADA_dataset_id\]](http://fada.biodiversity.be/group/show/[FADA_dataset_id]) [date accessed]
- *Example:* Bock P., Gordon D. (2016). WoRMS Bryozoa: World List of Bryozoa (version 2016-02-01). World Wide Web electronic publication. Accessed through <http://fada.biodiversity.be/group/show/9> [date accessed]

This corresponds to the general group citation available in WoRMS. If in the future FADA would implement individual taxon page citations, then the available taxon page citation from WoRMS needs to be included.

- b. FADA data integrated in WoRMS:

When FADA data is integrated into WoRMS, two options are available:

- The taxon is new for WoRMS: the FADA-reference will be added as 'basis of record' to the taxon page, and a deep link to the corresponding webpage in FADA will be made.

- The taxon already exists in WoRMS: the FADA-reference will be added as an 'additional source' to the taxon page, and a deep link to the corresponding webpage in FADA will be made.
2. By default, data incorporated in the FADA database are available for download through its website and through the Freshwater Biodiversity Data Portal. For data obtained through WoRMS, the FADA data management team will obtain permissions from the WoRMS taxonomic editors to have the freshwater records available for download through the FADA website and/or Freshwater Biodiversity Portal. The WoRMS Data Management Team will support the FADA data management team in obtaining these permissions. Where such permission has not been granted, FADA will not make them available for download.
 3. By default, data incorporated in the WoRMS database are available through the Portal under the Creative Commons Attribution License and accessible through several web services. When downloads are requested, each user agrees to not distribute the WoRMS database beyond their personal/institutional use. When further distribution of the data is involved, a specific MoU is set up with this user.
 4. Both parties will not provide all or any components of the content to other data providers for wide distribution through their own channels. Rather such requests for re-usage (e.g. for integration in the Catalogue of Life; www.catalogueoflife.org) will be forwarded to and discussed with the respective partner, unless specific data exchange agreements are already in place. In these cases, the exchanged data become part of the already existing agreement.
 5. Neither party, nor its users may alter or replace taxonomic content provided by the other party. Instead, requests for corrections or additions will be forwarded to the other party.
 6. Either party reserves the right to filter out specific content or records provided by the other party at its sole discretion. E.g. FADA will only display information on extant freshwater species.
 7. The Electronic Data and the Electronic Intellectual Property (EIP; any data provided in an electronic format) is licensed on an "as is" basis. Both parties cannot make any guarantees, representations or warranties with respect to the data, either express or implied, arising by law or otherwise, including but not limited to, effectiveness, completeness, accuracy, or fitness for purpose.

8. Each party shall indemnify and save harmless the other party, its servants, agents and contractor from and against any claim, demand, or action, alleging loss, costs, expenses, damages, or injuries (including injuries resulting in death) arising out of the party's use of the EIP or in any way relating to this agreement.

Conflict resolution

To resolve any potential conflicts either relating to the content of the exchanged data and information or regarding the execution of this agreement, we foresee the procedures outlined below.

Taxonomic conflicts:

In case (a) taxonomic editor(s) from either initiative indicates scientific issues with the checklist in the corresponding database. The OD Nature and VLIZ can decide to either:

- Contact the responsible editors of both parties to resolve the issue at hand and to encourage them to reach a consensus (preferred approach)
- Keep the conflicting checklists as independent lists, in case no consensus can be reached.

Editors from either registers cannot request to delete the exchanged data and information from the databases. If an editor would no longer be willing to update or deliver his/her data and information to either initiative, the following will happen:

- For WoRMS: another editor will be sought, who can take over the responsibilities of the editor withdrawing from his tasks. The new editor will then build upon the already available content.
- For FADA: a note will be added to the relevant pages, stating: "the information on this page is currently not further updated".

Conflicts related to this agreement:

In case the data management teams of either initiative are unable to meet the conditions of this agreement and are unable to resolve any conflicts among them, the issues will be escalated to the director level.

If this agreement would be terminated, neither party can demand to withdraw the exchanged data and information from the databases. In such a situation, both FADA and WoRMS can continue the maintenance of the received data as they see best fit, respecting the original origin of the data.

Amendments and Modifications

This memorandum is not limited in time and may evolve with the agreement of both parties.

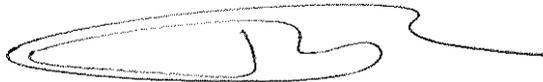
Either Party may recommend amendments to this MoU by notifying the other Party and, with the subsequent agreement of the other party, then implementing those amendments.

This Memorandum shall impose no financial obligations on either party.

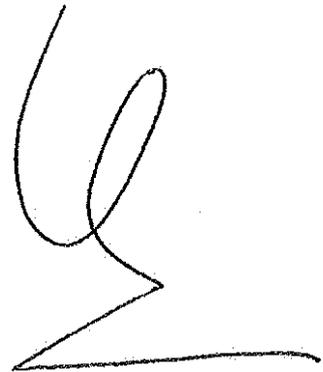
The Memorandum is effective on the date of the signature hereto and will remain in effect for the initial period of 2 years. It is automatically renewed for the same period, unless there is a notice of termination by one of the parties. The latter should be transferred at least 3 months before the contemplated termination date.

24/07/2017

For OD-Nature,
Patrick Roose



For VLIZ,
Jan Mees



For the WoRMS Steering Committee,
Tammy Horton

