

The Flemish LifeWatch project

Appendix 11 – Milestone documentation: Initiate the building of MolluscaBase, a global database for Molluscan species (all environments, recent & fossil), December 2014

Before MolluscaBase

In February 2014, the Aphia database – the data system behind the World Register of Marine Species (WoRMS) – contained 43,800 valid species names of marine Mollusca, representing about 20% of all accepted marine species names in WoRMS. The majority of these has been verified by a taxonomic editor.

Over the last 5 years, the WoRMS taxonomic editors have kept up with the ca 520 new mollusc species published yearly, and are also catching up with the ‘older’ names not yet documented in the database. It was estimated that only about 5% of all valid marine mollusc species are now missing in the database, a gap that is gradually being filled.

A similar global list of the freshwater and terrestrial Mollusca is lacking. Although there is a wide variety of resources out there – e.g. Fauna Europaea, the Australian Faunal Directory, ITIS, etc. – the malacological community is still lacking an authoritative online resource for all non-marine molluscs. It was estimated that there are about 23,000 species of land snails/slugs and about 5,000 freshwater gastropods and bivalves.

Rather than developing a separate project, the chief Mollusca editors in WoRMS have decided to expand the database, and also include land and freshwater Mollusca within Aphia. They also agreed that the list should not be limited to Recent Mollusca, but will also, in the longer run, include all fossil mollusc names ever published. The magnitude of the fossil molluscs name bank is not known, but is certainly in the many tens of thousands.

Towards MolluscaBase

On February 6th and 7th 2014, a group of 7 malacologists and members of the WoRMS data management team gathered at the Flanders Marine Institute (VLIZ), host institute of WoRMS, to discuss a strategy to expand the molluscan component of WoRMS to MolluscaBase (Figure 1). The participants were: Philippe Bouchet (WoRMS), Gary Rosenberg (WoRMS), Serge Gofas (WoRMS), Simon Schneider, André Sartori (WoRMS), Eike Neubert (Fauna Europaea) and Ruud Bank (Fauna Europaea).

This workshop was financially supported by LifeWatch.



Figure 1 – MolluscaBase workshop, February 6th-7th 2014, Ostend (Belgium)

This workshop was the first step towards MolluscaBase, a Global Species Database covering all marine, freshwater and terrestrial molluscs, both recent and fossil. During 2014, the concept of MolluscaBase was developed further, including the first imports of additional marine taxa and new terrestrial and freshwater groups. In addition, a pilot project on fossils and their indexing in the geological time scale was initiated. New taxonomic editors were invited to cover the non-marine and fossil taxa. So far, 40 taxonomic editors are on board for MolluscaBase.

MolluscaBase is growing

As a first action with regard to MolluscaBase, the content of **CLEMAM** – Check List of European Marine Mollusca – was transferred. During the transfer, there was a strong collaboration with the responsible editor - Serge Gofas - to make sure that all information was correctly imported into MolluscaBase. This collaboration led to the addition of 5.712 new (basonym) names, 7.977 references of original descriptions and 3.063 type locality notes to WoRMS/MolluscaBase.

Another major input, completed by November 2014, was the import of the **FreshGEN** database, Freshwater Gastropods of the European Neogene, which contains information on all fossil freshwater gastropod species described from the Miocene and Pliocene of Europe. The FreshGEN database was compiled within the project "Freshwater systems in the Neogene and Quaternary of Europe: Gastropod biodiversity, provinciality, and faunal gradients" funded by the Austrian Science Fund FWF (Project no. P25365-B25) under the leadership of Mathias Harzhauser and Thomas Neubauer (NHM Vienna). Instead of launching a separate database, FreshGEN kindly offered to share its information with both MolluscaBase and WoRMS. Through this collaboration, no less than 4.360 new taxa have been added. The FreshGEN data can be consulted through their own thematic portal within WoRMS (<http://www.marinespecies.org/freshgen/>).

63 species from the publication of **Marshall & Barker, 2008** were added to MolluscaBase. [*Marshall, B.A.; Barker, G.M. (2008). A revision of the New Zealand landsnails referred to Allodiscus Pilsbry, 1892 and Pseudallodiscus Climo, 1971, with the introduction of three new genera (Mollusca: Gastropoda: Charopidae). Tuhinga. Records of the Museum of New Zealand Te Papa Tongarewa. 19: 57-167. <http://www.marinespecies.org/aphia.php?p=sourcedetails&id=193828>*]

As **fossil taxa** are becoming more and more abundant within WoRMS – and MolluscaBase wants to document all fossil mollusks ever described – there was a need to discuss the fossil part of WoRMS in more detail. A LifeWatch sponsored workshop was organized to discuss improvements and additional functionalities related to the storage, usage and display of fossil taxa and their ranges in the Aphia database. Following this workshop, the existing functionalities to document the stratigraphy or fossil range of fossil species were fine-tuned and are now tested within a number of phyla (e.g. Foraminifera, Echinodermata and Mollusca).

The next scheduled upload concerns the **molluscan data of Fauna Europaea**, curated by Ruud Bank and originally compiled during an EU funded project within the Fifth Framework Programme since March 2000. This list covers all land and freshwater species of Europe.

As WoRMS, MolluscaBase will further develop through the inputs of active taxonomic editors. Following the announcement of the creation of MolluscaBase, additional contacts with possible contributors were made. During 2015, the MolluscaBase group – in collaboration with the WoRMS Data Management Team – will incorporate the Indo-Pacific Mollusca database into MolluscaBase, together with a list of the Mollusca of Tierra del Fuego (South of Brazil).

A MolluscaBase portal is under development.

