

LifeWatch Data Grant 2014

Filling the gaps in the World Register of Marine species (WoRMS)

Siboglinidae (Polychaeta)

Final Report

Lenka Nealova and Adrian Glover



1. Data grant background

The **INDEEP deep-sea species portal within WoRMS (WoRDSS)** is a taxonomic database of deep-sea species based on the World Register of Marine Species (WoRMS). This site was launched in December 2012 during the Deep-Sea Biology Symposium in Wellington, New Zealand as a project of INDEEP (<http://www.indeep-project.org>). The primary goal of the project is to build a comprehensive database of known deep-sea species and to present this as a thematic species database (TSD) of WoRMS, with all data dynamically linked to WoRMS and their team of taxonomic editors. Through WoRDSS, we are also providing [taxonomic references](#) (identification resources) that will allow researchers and educators easier access to identification literature. The WoRDSS project provides an open-access source of quality taxonomic information and imagery on deep-sea species and at the same time enhances the WoRMS database through the provision of images, new sources and editorship.

The first version of [Deep Sea ID](#), an iOS field guide app interface to WoRDSS, became available for free download for iPhone and iPad from 14th March 2013. The app has already been downloaded by over 12000 users and has been widely welcomed by the community and has provided a new audience for the WoRMS taxonomic backbone, at no cost. It allows offline access to the World Register of Deep-Sea Species (WoRDSS) and currently stores on your device the taxonomic information for over 20,000 deep-sea species, over 350 high-resolution photographs of deep-sea specimens as well as links to online taxonomic tools, sources and important references. The app is designed to improve access to taxonomic information for researchers and contractors working at sea or in the laboratory as well as educators and science communicators who wish to learn more about the remarkable diversity of deep-sea life.

This grant from LifeWatch is one of three aiming to provide support for both taxonomic quality on WoRMS and WoRDSS through editorship of particular taxa. These groups are the Asellote Isopoda; the Holothuroidea; and the Polychaeta. It has been shown that the WoRMS/WoRDSS list and taxonomic quality can be significantly improved through working directly with experts in each taxon. This project was specifically focussed on the Siboglinidae and deep-sea records in WoRDSS. The deliverables are defined below.

2. Agreed deliverables (as specified in the Data Grant contract)

1. Provide taxonomic editorship to WoRMS on approximately **200 taxa** (see below)
2. Provide original description references, links to types and images, depth distribution data and/or confirmation of exclusion or inclusion in the WoRDSS for an additional **~600 taxa**.
3. Provide identification resources (references to published keys, online or literature) including explanatory notes for each reference (e.g. indicating if regional or if certain taxa are omitted from the key). These resources will be filling gaps in both WoRMS and WoRDSS, but will focus on the family level taxa in WoRDSS in the first instance, to enable access to the matched funding from INDEEP.
4. Provide the best available image for all family level taxa and higher if not already included in the iOS app.

3. Results of the project:

1) Taxonomic editorship of Siboglinidae:

In total 264 edits were made to the taxa.

checked: 222 (original description/ re-description /status source added where missing)

added: 18 (original description, re-description or status source linked)

deleted: 2

revised: 11 (source of synonymy linked)

added to WoRDSS with context source linked: 133

In total 109 edits were made to specimens by including information on type number/code, institution where types is held, type locality, depth and collection date.

2) Depth distribution in WoRDSS:

~300 species added from CEDAMAR database, context source linked (completed)

~200 species added from other sources so far, context source linked (not completed)

~1500 species listed in WoRDSS checked using CEDAMAR database, original descriptions, taxonomic revision publications, museum collections (completed)

~ 400 species problematic (please get back to with your suggestions on how to proceed)

3) Identification sources uploaded. Completed as in deliverable.

4) Images searching has proved more difficult but about 100 images remain to be uploaded in the next version of Deep Sea ID (this part of the project is responsibility of INDEEP).

In summary, deliverables where exceeded (e.g 1500 depth distributions checked) except in the case of 4) image searching which is ongoing as funded by INDEEP.

4. (Brief) description of the work/methodology

The work was completed in 152h. As a first step, the list of existing taxa in WoRMS was downloaded. Every taxon on this list was checked for:

Validity of name – this was done by search in google/google scholar/zoological records/web of science/library sources at NHM London/correspondence with other taxonomic experts. If the name was found to be invalid it was changed to such status with link to accepted name.

Accuracy of the authorship, year of publication – same as above.

Original publication and other taxonomic acts – if the publication was missing, it was added to the literature list and linked to appropriate taxon.

Missing data – as part of literature/web search, occasionally species not registered in WoRMS were encountered. These were added (both valid and invalid names were added), sources linked.

The work above is consistent with “essential” information required. Additionally where appropriate, the taxon was added to WoRDSS using context “deep-sea”, with context source linked.

The next step to complete was to provide information on specimen, with priority given to the following: type number/code, institution where types is held, type locality (name and/or coordinates), depth and collection date. This was accomplished by literature search of taxonomic publications both in print and on-line and museum databases, correspondence with other experts (dataset provided by R. V. Smirnov from Zoological Institute, St> Petesburg Russia was particularly rich source of information).

This step was not completed for all taxa, mostly due to lack of information (at least relatively easily obtained information) and time constrains.

5. Problems encountered and how it was solved (or expected solutions).

No major problems were encountered.

6. Other: remarks, suggestions, other information, bibliography, ...

/none/