**Master of Marine and Lacustrine Science and Management**

OCEANS & LAKES
Master of Marine and Lacustrine Science and Management

# Professional Internship

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*This one month internship was done at the Flanders Marine Institute (VLIZ) in Ostend, Belgium. The report will consist of general information of the institute and the division where the work was done followed by descriptions of the different tasks.*


## The institution: VLIZ

The **VLIZ** ("Flanders Marine Institute" or "Vlaams Instituut voor de Zee") was established in 1999 and has become the coordination and information platform for marine and coastal scientific research in Flanders. Although it is a scientific institution, the VLIZ doesn't do any actual scientific research. It does however support marine scientific research and education, by:

- Accumulating and providing scientifically sound marine information.
- Providing research equipment and infrastructure. This includes the use of the research vessel 'Simon Stevin', laboratories in the marine station in Ostend, and an ROV.

Other objectives of the VLIZ are:

- Promoting regional and international marine scientific research and education.
- Serving as a meeting platform for the marine research community.
- Improve the view on marine scientific research in Flanders by raising awareness and popularity.
- Providing information to policymakers.

Within the VLIZ there are several divisions, the Data Centre division being one of them.

One of the responsibilities of the **VLIZ Data Centre** is the general data management of marine data. This includes the collection and preservation of marine data and distribution or exchange of marine data.

| Documentation | → | Standardisation | → | Integration | → | Archiving | → | Redestribution |
|---|---|---|---|---|---|---|---|---|

Other than general data management the Data Centre is also responsible for the maintenance and management of several international e-infrastructures: LifeWatch**,** the central portal for the European Marine Observation and Data network (EMODnet), World Register of Marine Species (WoRMS), Global Sea Level Observing System (GLOSS), Ocean Biodiversity Information System (EurOBIS), Marine Regions.

*All the tasks during this internship were done within the Data Centre division.*

For more information about VLIZ and the other divisions go to www.vliz.be.


## Tasks linked to WoRMS

### WoRMS

The World Register of Marine Species (WoRMS) emerged from the European Register of Marine Species (ERMS). WoRMS combines several species registers all maintained by the VLIZ Data Centre division. And

to ensure the consistency in taxonomy VLIZ developed a consolidated database named 'Aphia'. This database integrates the species registers and it links other marine registers (e.g. AlgaeBase and FishBase).

WoRMS provides a reliable and comprehensive list of names of marine species, including a whole range of additional information (e.g. classification, information on synonymy, vernacular names, environment and distribution).

There is a continuous flow of information in WoRMS. New information is added, removed or corrected daily by the taxonomic editors and by members of the data management team. Keeping WoRMS up-to-date requires constant work.

*Several of the tasks done during this internship were done on the World Register of Marine Species, or at least in some way linked to WoRMS.*

For more information about the World Register of Marine Species (WoRMS), go to www.marinespeciesorg.

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### Tasks 1: "ChaRMS"

ChaRMS stands for "Chinese Register of Marine Species". ChaRMS is a regional species database for which an interface is being constructed. When construction is finished a link will be available on the WoRMS site.
The task was to incorporate several files with a species list of different classes into one file.

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### Task 2: "De-duplication of sources"

WoRMS also has a large list of literature references. Literature that is in some way linked to one or more species in the register. Like for most things, the system is not infallible. Due to spelling error, typing error or uncertainties the same literature reference can be present in multiple times. For this type of errors a 'de-duplication'-tool was developed.
The task was to remove duplicates of literature references using the de-duplication tool. A list of two-by-two similar literature sources was given and a choice could be made to keep one or both (when clearly 2 different sources or when uncertain) of the sources.

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### Task 3: "Original descriptions"

A whole range of information can be found for each species in the register. One of which is the literature source with the original description of the species.
The task was to link the literature sources of the original description to a given species list.

> ➢ Search for the source is in WoRMS. Found?
>     YES: Link it to the species as 'original description' source.
>     NO: Search for the original description on Google Scholar. Found?

> ➤ YES: Add the reference as an new source (if possible with the full text in pdf-format) and link to the species as 'original description' source.
>
> NO: Skip species and go to the next species in the list.

The list included species from the classes: Asteroidea, Cubozoa, Demospongiae, Hydrozoa, Insecta, Ostracoda, Trematoda, etc.

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## Task 4: "Feedingtypes of parasites"

A whole range of information can be found for each species in the register. One of which is the feeding-type and the host-species.
The task was to add a feeding-type, a host-species and link the literature source where the host is mentioned to a species from a given species list from the class Monogenea.

> ➤ First step: Same procedure as Task 3: "original decription".
> ➤ Original description mentions a host-species and feeding-type?
>
> YES: Add feeding-type and host-species and link the literature source.
>
> NO: Look for other literature reference mentioning feeding-type and host-species on Google Scholar. Found?
>
> > ➤ YES: Check if reference is already in WoRMS. If the source is not in WoRMS add new source.
> >
> > Than add feeding-type and host-species and link the literature source.
> > ➤ NO: Skip species and go to the next species in the list.

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## Task 5: "LifeWatch – OBIS/WoRMS"

The task was to check several species lists acquired from OBIS (Ocean Biogeographic Information System) with WoRMS. Especially focused on species that are not found in WoRMS. There can be several reasons why a species is not in WoRMS. A taxon match was done using the online data service on LifeWatch (were the list is checked against several linked databases like for example AlgaeBase and Catalogue of Life) and a taxon match on the Interim Register of Marine and Nonmarine Genera (IRMNG). The results of both taxon matches were put together and reviewed, and remarks were added where necessary.

For more information on LifeWatch taxon match go to www.lifewatch.be/en/e-lab.

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## Task 6: "Hexacorallia"

The 'Hexacorallians of the World' database used to be maintained by Daphne G. Fautin. Because she can no longer maintain the database (due to retirement) all the information had to be extracted from the online database. The information needed to be extracted before the site goes offline and all the information is lost.

The task was to copy species information into an excel-file. The species information had to be copied one-by-one. The complete file will eventually be used to upload the information in WoRMS.

## Task linked to EurOBIS

EurOBIS is the European node of OBIS (Ocean Biogeographic Information System) and is managed by VLIZ. They provide distribution data on marine species in European waters or distribution data of marine species collected by European researchers.

For more information on EurOBIS go to http://www.eurobis.org.
For more information on OBIS go to http://iobis.org.

## Task 7: "AfrOBIS"

The task was to check and structure raw data-files send from AfrOBIS (the South-African node of OBIS) to EurOBIS. And after the raw data was checked and structured all the possible fields of the Darwin Core standard had to be filled in.

For more information on the Darwin Core standards go to http://rs.tdwg.org/dwc/.

| | Monday | Teusday | wednesday | Thursday | Friday |
|---|---|---|---|---|---|
| | | | **22/07/2015** | **23/07/2015** | **24/07/2015** |
| M | | | ChaRMS | De-duplication | Original descriptions |
| A | | | De-duplication | Original descriptions | Origial descriptions + LifeWatch |
| | **27/07/2015** | **28/07/2015** | **29/07/2015** | **30/07/2015** | **31/07/2015** |
| M | LifeWatch | LifeWatch | LifeWatch | LifeWatch | Original descriptions |
| A | LifeWatch | LifeWatch | Original descriptions | Original descriptions | Original descriptions |
| | **03/08/2015** | **04/08/2015** | **05/08/2015** | **06/08/2015** | **07/08/2015** |
| M | Original descriptions | Original descriptions | Hexacorallia | Hexacorallia | Hexacorallia |
| A | Original descriptions | Hexacorallia | Hexacorallia | De-duplication + Original descriptions | Hexacorallia |
| | **10/08/2015** | **11/08/2015** | **12/08/2015** | **13/08/2015** | **14/08/2015** |
| M | Hexacorallia | Hexacorallia | Hexacorallia | Hexacorallia | AfrOBIS + Feedingtypes |
| A | Hexacorallia | Hexacorallia | Hexacorallia | De-duplications + AfrOBIS | Feedingtypes |
| | **17/08/2015** | **18/08/2015** | **19/08/2015** | **20/08/2015** | **21/08/2015** |
| M | Feedingtypes | Feedingtypes | AfrOBIS + Feedingtypes | AfrOBIS + Feedingtypes | AfrOBIS |
| A | Feedingtypes | Feedingtypes | Feedingtypes | AfrOBIS | AfrOBIS |