



World Register of Marine Species: Steering Committee meeting

University of Málaga, Science Department – Málaga, Spain
Hosted by Serge Gofas
09 June 2017

Participants: Tammy Horton, Andreas Kroh, Serge Gofas, Jan Mees, Nicole Boury-Esnault, Simone Brandão, Gustav Paulay, Gary Poore, Sabine Stöhr, Francisco Hernandez, Leen Vandepitte, Wim Decock, Sofie Vranken, Kevin Verfaille

Remote participation: Nicolas Bailly, Gary Rosenberg

Apologies for Absence: Mark Costello

The WoRMS Steering Committee meeting was hosted at the University of Málaga (Spain), by Serge Gofas. The meeting was sponsored through LifeWatch Belgium - part of the E-Science European LifeWatch Infrastructure for Biodiversity and Ecosystem Research – and the University of Málaga.

Tammy Horton – Chair of the WoRMS SC – thanked the University of Málaga and Serge Gofas for their offer to use their facilities and for organizing the meeting.

Action points of previous meetings

Going through the action points of the previous (physical and virtual) meetings is a returning item on the SC agenda. This allows to get a good overview of the status of all the previously identified actions, and discuss possible problems that have risen.

A list of all the action points was circulated prior to the meeting. All action points were revised, starting with the ones from the December 2016 virtual meeting.

Kempf

Simone Brandão informed the Steering Committee that Eugen Kempf – custodian of the large Kempf Ostracoda database – has passed away a few months ago. Given the previous situation with Kempf

and the use of his data in WoRMS, it seems timely to start the communication with Renate and Finn again. We do not only need to consider the possible loss of the data (orphaned database), but also what will happen with the vast library that supports his database. Communication with Renate and Finn should be initiated again, pointing out that WoRMS/Aphia is willing to help in the safekeeping of his legacy. There was some discussion of the possibility that his library collection might be at risk, as it is often University space is cleared quite quickly in these circumstances. It was agreed by the SC that Simone will act as the contact person with Finn and Renate, on behalf of the Steering Committee. Simone will prepare communication in collaboration with Tammy Horton.

MoUs

The following Memoranda of Understanding are under revision and being updated:

- WoRMS and Encyclopedia of Life (EoL). Draft text under revision by EoL. Aimed to have this signed by the end of the summer.
- WoRMS and Freshwater Animal Diversity Assessment (FADA). Text is being finalized.

An MoU with FishBase is under consideration and the MoU with Catalogue of Life (CoL) will be revised.

DOIs

The DMT is looking into how DOIs can be assigned to the different versions of WoRMS and to existing GSDs, TSDs and RSDs. It is agreed that this would be useful if it was completed by the 10-year anniversary release of the new WoRMS website.

Collaboration MolluscaBase & PaleoDB

Gary Rosenberg pointed out that the DMT should further check how the collaboration between Paleobiology database (PaleoDB) and MolluscaBase can be shaped. He mentioned that Jocelyn Sessa from AMNH is interested in this. She was recently appointed curator of invertebrate paleontology here and will be starting in July at AMNH. She is active with the PaleoDB and is a PI on the ePANDDA product for linking databases in the GeoSciences <https://www.idigbio.org/tags/epandda>. With her involvement, Gary believes we will see progress on this item.

ACTION POINTS:

- Simone to write to Finn and Renate. Main goal of this communication is to check what the current situation is, and if there are plans to safeguard his legacy.
- DMT & Andreas Kroh to follow up on the MoUs.
- DMT to further investigate the DOI-assignment to versions of WoRMS
- DMT to assign DOIs to the existing GSDs, RSDs and TSDs
- DMT to follow up on collaboration MolluscaBase & PaleoDB, through contact with Jocelyn Sessa.

Feedback on current process

Gustav Paulay reported on the assignment of the Achievement Award and provided general feedback on the process. The system works well (mailing, nominations and jury assignment), but he points out that there were very few nominations. This could be due to reminders, but it generally feels that people are not engaged.

Tammy commented that the nomination process might be too difficult: one page of text might be too much to ask. People should be able to send in free text, and statistics should be produced by the DMT. Right now, it is too tedious for people to comply with the requirements for nominating someone.

Gustav is willing to take on again next year.

Title and subtitle amendments

It was decided to keep the titles as they are right now: “Early Career Researcher Award” (without subtitles) and “Achievement Award”. The awards will not be renamed, no reference will be made to other persons (as per suggestion Mark Costello).

Format of the awards

The current format of the awards is A3. The artwork was done by Jo Ogier, a New Zealand artist and the awards are being printed in Vienna, by Andreas Kroh. A recent issue with damage to the award when sending it, has opened the discussion to re-think the format of the award.

The proposal by Sabine Stöhr to hand over the award in a folder (leather book-binding looks) was well received, reducing the format to A4, instead of the current framed A3-format.

Andreas will continue to do the printing of the award, and VLIZ will take care of the binder and the final delivery to the awardees. VLIZ will also look into possibilities to have the new WoRMS logo embossed in the leather binders.

The Award will slightly need to be adapted for the next round (2018), including the newly chosen WoRMS logo. Andreas has agreed to look into this.

Approval of the nominee – new species ‘gift’

It is agreed that there is no need to ask the nominee for his approval. Receiving the award should be a pleasant surprise and it is generally felt that nobody will refuse. It was also decided that the names of the nominees for each of the awards will not be made widely known.

The idea of naming a new species after an awardee has been rejected. It is pointed out that auctions for buying names still exist, and that WoRMS should not get into this. Several problems were identified, such as getting the description done within a proper timeframe and finding an editor that is willing to do this, which seems to be a weird request towards our editors.

ACTION POINTS

- Gustav & Mark: Rethink the draft text for calling nominations. Should be adapted to match early career award. Both calls for nominations should be sent out at the same time. Finalize text by end of January.
- VLIZ to look into binder-options for sending out the award (A4 format).

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| Gaps |
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Editor gaps

- Brachiopoda. Sabine Stöhr knows a possible editor. It is proposed that this person should be asked if they would be willing to act as a 'shadow editor', pointing out additions and updates to the DMT to keep the list up-to-date, but without being an official editor.
- Protozoa: action points of the last year remain. Gustav Paulay will talk to someone of the Society of Protozoologists and will keep the DMT informed.
- Bacteria: no editors available, DMT follows up as much as they can.
- Higher classification issue was raised by Gustav. WoRMS is different than what others represent regarding higher classification. Serge pointed out that the primary goal of WoRMS is species names, not phylogeny. Although higher classification is an obvious issue, editors should still be able to decide on the higher classification within their group.

There might be issues with the stability of higher classification, and WoRMS wants to avoid making too many changes over time. It is argued by Gustav that single cell eukaryotes are relatively stable now, and therefore the current recognized classification should be taken into account. It was suggested that WoRMS has an editorial board for the higher level classification. The SC could be the board that makes decisions on a higher level. This might pose a problem, as current SC only represents animals. Protistologists should make suggestions towards higher classification to DMT. WoRMS should avoid having outdated information.

Ruggiero et al is the higher classification used in WoRMS, which will be updated with new publications. Ruggiero et al will be updated every 5 years, but worms does not need to wait for 5 years. The rule in CoL is that the CoL hierarchy prevails until a node down in the tree is the entrance for a GSD. However, it does not prevent to check the classification inside a group in WoRMS vs CoL to avoid outdated data, especially for sectors that are not managed by editors. A new CoL hierarchy version is in preparation.

Content & priorities

Top 9 priorities identified by SC (MARINE SPECIES)

1. Have at least 1 active editor per taxonomic group (cfr. Bacteria, Protozoa)
2. Mark (accepted) species as "checked by editor" **[93% complete]**
3. Document basionym/protonym (original name) **[89% complete]**
4. Complete missing authorships: **[99.3% complete for accepted names]**
5. Document original description of each (accepted) species **[36% complete]**
6. Complete the environment flags **[98% complete]**

7. Document higher classification
8. Document type localities (distribution – specimen – note) *[15-20% complete]*
9. Document type species for genera *[37% complete]*

Several remarks and suggestions were made towards these priorities and their statistics. These will be taken into account by the DMT as much as possible.

A lot of the remarks were linked to the documentation of type material/type localities. The SC and DMT acknowledges that a lot of information is already existing, and that efforts should be made to collaborate with other resources to make this information available through WoRMS.

For 2017-2018, the main priorities will be to document the original descriptions (preferably reference with a pdf or deeplink to the source) and to document the type species for all available genera.

It is recognized that “cleaning data” is a continuous task, and should not be listed as a separate priority. Serge suggested that cleaning of ‘basis of record’ or ‘additional source’ could be tackled by a lot of editors. Many of these sources seem redundant on the taxon pages and should be listed under other categories (distribution, notes ...).

IRMNG and OBIS matching - update

This is an ongoing task within the DMT.

For IRMNG, the comparison with WoRMS has been completed. More than 2.200 entries were added to IRMNG, based on WoRMS and now there are more than 70.000 deep links from IRMNG to WoRMS.

Currently, the DMT is listing entries in IRMNG that have no match in WoRMS, and that are marine. These lists are being sent to the responsible editors for checking. This way, quality control and updating can be done at both ends.

OBIS names that do not match with WoRMS are being processed and – where relevant – communicated to the responsible WoRMS editors. This is an ongoing process.

ACTION POINTS

- Gustav to check with Protozoologists on input for higher classification for this group
- All: look into higher classification & to add the sources on this. When out-of-date: should be updated/changed. Search for people with suggestions for groups where we do not have an editor.
- DMT: make overview of original names without original description. Can this be added to the weekly digest? Or in the advanced search?
- DMT to re-iterate priority list to the editors. Can ask help to DMT to get this done. Send out message separately, not linked to SC reporting.
- DMT to check pdfs & links to e.g. BHL. How many links do we have instead of actual PDFs?
- DMT to check GBIF for type locality datasets. Perhaps these can be screened and their information made available through WoRMS (per suggestion Sabine).
- DMT to look into improving the link between the references of original descriptions in WoRMS and their availability in BHL.

- DMT to draft a road map to extract type locality information from existing resources, in a step-wise approach. Keep Nicolas in the loop as he has done some work on this topic for the Catalogue of Life.

WoRMS 10-year Anniversary plans, including website update

It was decided that the new website should be released on November 6th. In parallel, it is aimed to have both the scientific (guidance) paper and technical paper published by then.

Tammy Horton will aim to get an article into 'The Conversation' (<https://theconversation.com/uk>).

Tammy has also offered that her institute can take care of the official press release for the new website. This means that VLIZ can then just take over this communication, and doesn't need to prepare something themselves, leaving more time to work on the website and its release.

Planned papers: status

Scientific paper

Tammy provided an overview of the status of the guidelines paper. The reviewers suggested major revisions, which are currently being processed and for which Tammy is asking input from the full SC and DMT. Resubmission needs to be done by June 30th.

It was decided that the guidelines paper will be used as the planned 10-year anniversary scientific paper. It is believed to be very hard to try and publish another scientific paper on WoRMS within the perceived timeframe (November 2017, together with the launch of the new website).

A number of things will be added to also cover a bit more on the original ideas for the 10 years paper and what the next steps and priorities are. Deadline for comments is June 30. Tammy will make further progress in the next weeks. Tammy will send around a more finalized version for everyone to have a final look at. The general idea is to keep content as it is now, but expand with extra content.

All are in agreement with the proposed process. An urgent and important change is the need for a different title, instead of the current working title.

Technical paper

A general outline of the technical paper has been made by the DMT. The writing of the manuscript is planned for July, with submission to the WoRMS PLoSOne collection early August.

Several topics will be touched in the manuscript, providing an as complete as possible overview of the evolution of WoRMS over the past 10 years. A detailed overview of these topics can be found in Appendix. Andreas has agreed to do summary statistics and a figure on WoRMS data requests and their use for this paper. The DMT has provided logs on the data requests prior to 2014, when other SC members were responsible for reviewing the data requests.

Website update

Kevin Verfaillie gave an overview of the current status of the new web lay-out, focused on the requested changes to the taxon pages by the SC over the last years.

The new website will also contain a list of all WoRMS-related publication, making a distinction (where possible) between direct and indirect usage of information from WoRMS.

A number of remarks were formulated during the presentation of Kevin. These have all been listed by the DMT and – where possible – will be taken into account in the further development of the new site.

ACTION POINTS

- Andreas & Tammy to come up with a list of note types that should be associated with the taxon details [done]
- Bart to look into possibility of adding a screen-lock for the taxon-name part of a taxon page (title + apihaID + classification line) as per suggestion of Gustav
- DMT: Check possibility of adding a button to this area that would allow to toggle the view between “classical” WoRMS (i.e. extant marine only) and WoRMS 2.0 (including non-marine and fossil taxa)

Overview of DMT activities: December 2016 – May 2017

The DMT gave a brief overview of its activities from December 2016 until May 2017. These are listed in appendix.

Working group on images: feedback on activities & plans for next 6 months

No activities were reported for the images working group. The group still needs to take off, and it was agreed that the DMT will support this.

Two new volunteers stepped up: Gustav Paulay and Andreas Kroh. Gustav will take the initiative to re-start this working group, by the end of the summer. All previous action points will be checked, giving a solid basis for the group to start from.

Tammy Horton presented the Internet Marine Collection, an ongoing initiative that has approached WoRMS as a possible collaborator. The SC worries a bit about a possible collaboration with them, as they are commercial, and information seems to be structured in a similar way compared to WoRMS. The general worry is that a copy will be created of WoRMS, under a different brand and that WoRMS might lose users to them. If a collaboration is pursued, then the SC needs assurance that they will deep-link to WoRMS, and will only use the taxonomy.

The idea behind it is that WoRMS editors will get checking rights in this external database (=top level). Technical aspects to make this happen need to be checked. Checking of images will need to go through the Internet Marine Collection database, and not through WoRMS.

It is suggested that WoRMS makes agreements with several existing image platforms, in order to share/show their images through the WoRMS ‘image’ tab. The DMT needs to decide for each of these platforms if they are stable enough for this kind of external linking (cfr. avoid dead links when

the external platform goes offline after months or days). An overview of existing platforms should be made, so that the DMT can check their stability and the working group can check their reliability (e.g. Linnean Society, Norway diver site have excellent images). Reliability of identification is an issue, next to the quality of the image.

ACTION POINTS

- Gustav to re-initiate the image working group, with support of the DMT [September 2017]

Working group on distributions: feedback activities & plans for next 6 months

The working group needs to discuss and decide upon many things in the near future. In general, they need to define the problems and possible solutions. Following that, after prioritizing, editors can be contacted for help/assistance.

Gary Poore points out that almost identical discussions have been held within the Australian Faunal Directory (AFD), more or less 30 years ago. The group should look at their approach and solutions.

ACTION POINTS

- DMT to initiate a new meeting for this working group, towards the end of the summer

Outreach opportunities

The World Conference on Marine Biodiversity (WCMB) (13-16 May 2018, Montréal Canada) is believed to be an excellent platform for WoRMS editors to present their work.

An initial idea was to have the next SC meeting back-to-back with the WCMB, but after some discussion, this plan was abandoned. The Conference coincides with other conferences and meetings, leaving too many SC members unable to attend.

The DMT will launch an additional announcement to the WoRMS editors, to point out the WCMB and to motivate them to submit abstracts. As on previous WCMBs, an ad-hoc WoRMS meeting can be organized, with the present WoRMS editors (as has been done in Aberdeen, 2011 & Qingdao, 2014).

A number of the SC members will be present at the following events: BioSyst-meeting (13-14 August 2017), DeepSea Symposium (September 2018) and the American Malacological Society (July 2017).

Next SC meetings will be held in December 2017 (virtual) and June 2018 (physical). Several options are available for the June meeting: Oostende (hosted by VLIZ), Southampton (hosted by Tammy) or Vienna (hosted by Andreas).

ACTION POINTS:

- DMT to check with Mark on possibility for a small WoRMS session during WCMB Montréal 2018
- DMT to fix data for virtual meeting December 2017
- SC-DMT to decide on date and location of June 2018 SC meeting

Citation on taxon pages

It is agreed that the current citation at the bottom of each taxon pages does not make sense, especially on the genus level: E.g. Callianassa: citation at the bottom does not make sense if you look at the species list on that particular page; Date of citation is 2010, while more recent species have been added after that date.

A discussion on this topic is needed, taking into account the following remarks:

- who is the citation for? Needs to be for the users, not for the editors. Aggregate author names upward? From species to genus, family, ...? can become problematic on higher level (class...).
- who is using taxon page citations? This is being done with genus pages within Amphipoda.
- Why not just take the general WoRMS/GSD citation and put this on each page?
- Entering through WoRMS vs GSD => also citation problem.
- What is the benefit of being cited for one page, some prefer to have general citation of WoRMS or of the GSD, TSD being accessed
- "accessed through WoRMS... + date". All components are in the citation, so what is the problem?
- "taxonomic edit history": Is this needed for WoRMS users? This contradicts the citation and the fact that species might be linked after the last edit history date.

Some proposals from the discussion, but this needs further work:

- replace the year (2010) with the current year (2017).
- "IN: World Register of Marine Species citation; Accessed on XXXX"

ACTION POINTS

- Tammy to collect suggestions and ideas on the taxon page citation and make decision

Steering Committee elections

Two positions are open for (re-)election: Gustav Paulay and Sabine Stöhr.

A call for nominations will be launched by the DMT. If needed, the nomination round will be followed by an election round. It is hoped to close the procedure by the end of the summer.

ACTION POINTS

- DMT to launch call for nominations for SC [July]
- If needed, DMT to organize election round for SC [August]

Selection of the new WoRMS logo

After careful consideration, the SC has chosen the new WoRMS logo from the more than 75 submissions. The winning logo was designed by Sarita Camacho da Encarnação, a Marine Biology

PhD student at the Centre of Marine and Environmental Research (CIMA), Algarve University in Portugal.

ACTION POINTS

- DMT to inform all participants to the competition on the outcome.
- DMT to implement new logo into website, to be released November 6th.

APPENDIX – Outline technical WoRMS paper

- Growth of portals
 - o which portals were launched when
 - o Only marine or mixed
 - o Usage of the portals
- Usage/citation of WoRMS over the years (cfr. Library-list; just list numbers => refer to scientific paper WoRMS 10 years (Tammy idea))
 - o Increase of data requests over time and analysis of usage scenarios
- Growth of editors
 - o Exact starting date of when we started working with editors. Refer to first editor workshop in Oostende.
 - o Evolution in increase/decrease of editors
 - o Illustrate fact that editors within a group are growing/changing
- Evolution in editor activity
 - o Yearly additions/changes/checks through online interface
- Evolution in use of taxon match service
- Evolution in available web services & their use
- Evolution in data download requests (mention transfer to DwC) & users (nationalities, reasons for use...) of the web services

- Influence of LifeWatch workshops & data grants on editor activity (short term or long term influence)
 - o Overview of workshops (when, how many people involved)
 - o Overview of grants (when, work done during grant; cfr. Tables that were made previously)

- Evolution in technologies & new tools (& possibly quantify their impact)
 - o RSS feeds
 - o Weekly Digest
 - o AquaRES

- # emails to info@marinespecies.org on yearly basis. Check if analysis is possible?
 - o Notifications
 - o Delete requests (taxon, distribution, other)
 - o User feedback (good & bad)

- # new species described per year => overview since 2007
- # additions of taxa (so new & 'old' names) per year => overview since 2007

- Identification of gaps (content + editors) & talk about the 'problem' groups

- Elaborate on advantage of cross-taxa collaborations by editors => number of very difficult cases can be solved/documentated through intensive and open collaborations
 - o Serpulida (Geoff Read)
 - o Scolopendra Linnaeus, 1758 (emails) (Geoff Read + MilliBase editors)

- Alcyonium
- ...
- Advantages of online user-feedback
 - Taking out duplicate entries
 - Solving errors in e.g. year of publication
 - Brya
 - Sandrine Tercerie
 - Georges Jansoone
 - ...
- Collaborations with other initiatives (CoL – OBIS – IRMNG) gives possibilities to make WoRMS more complete, especially for old names that are no longer used now, but are still important from a historical perspective and to be able to link original names to names currently in use.
 - Comparison IRMNG-WoRMS
 - OBIS non-matching names
- Briefly talk about re-newed website
- Document/highlight some examples of “clones” of WoRMS (Wikipedia => example Serge Gofas), for mysida, amphipoda ... (Tammy, JanM).
- Analyse the WoRMS publication list

Major activities

- Preparations of new WoRMS website
- Outline of WoRMS 10 years technical paper
- Environment flags continued at a low pace
- Aristotle news messages launched December 2016.
5 messages on Aristotle and the link with marine biodiversity (WoRMS & LifeWatch-related initiatives). Action made possible through collaboration with prof. Eleni Voultziadou (Aristotle University of Thessaloniki, Greece) and LifeWatch Greece. News was spread through WoRMS & LifeWatch & was picked up by several organisations in their news/twitter/facebook feeds (e.g. POGO & Marine Board). Additionally, the messages were forwarded to several mailing lists. It is estimated we have reached more than 20.000 people with this news action. See: <http://www.lifewatch.be/en/2016-news-aristotle>.
- Follow-up actions:
 - A manuscript combining several of these messages has been submitted in May to Mediterranean Marine Science, entitled “Aristotle’s scientific contributions to the taxonomic classification, nomenclature and distribution of marine organisms. We’re awaiting the reviewer feedback.
 - A second manuscript is being considered, focusing on the species traits.
- DMT involved in an Arctic Traits workshop, in Vienna (December 2016). Possible collaborations with the Arctic research community on the level of traits were discussed & a manuscript on the outcomes of the workshop is in preparation (DMT as co-author).
- 2 interns have supported the DMT in the last month. Main focus was on helping uploading pdfs & linking them to the correct species (DiatomBase & Tropical Deep Sea Benthos), adding a lot of original descriptions to WoRMS.
- Launch of the Nemertea Portal, as a direct result of the Nemertea workshop
- Update of the World Register of Tardigrada, in collaboration with the responsible editors
- Synchronisation with Turbellaria database of Seth Tyler has been finalized. A new portal will soon be launched. This will group the work of Seth Tyler & of Tom Artois (previous portal ‘World database of Proseriata & Kalyptorhynchia).
- Data rescue action for Millibase (World database of Millipeds/Diplopoda) was finalized. Not yet launched, as conversations are ongoing with another major Myriapoda resource: Sys-Myr. Content of Sys-Myr can also be made available through Aphia, and this action is planned for the summer. Once this is done, the portal will be launched.
- Meeting with Filip Poppe (www.conchology.bew) early January => agreement that WoRMS can make use of 5.000 images from the Conchology website. Positive responses to this by the involved WoRMS/MolluscaBase editors. DMT is currently looking into the technical steps needed to make this happen. The display will be similar to e.g. externally hosted images of musea.
- Register of Antarctic Species (RAS), extension of RAMS to non-marine environment. DMT is processing a number of files for upload to RAS. RAS will be launched early July, during the SCAR-symposium organized in Belgium.
- DMT had meeting with Haylee Weaver of Australian Faunal Directory (April 2017). Suggestions for collaboration were discussed, Haylee needed to check with her superiors for ‘go-ahead’.

DMT will follow up. Collaboration would be 2-way data exchange: WoRMS to AFD for taxonomy and AFD to WoRMS for distributions (type localities).

- Continuous support of Aphia editors & users.

Call for new workshops – to be launched early summer. All workshops should take place between October 2017 and May 2018. DMT will limit to a maximum of 4 workshops, due to the workload this gives for the organization and follow-up.

CoL collaboration

- WoRMS = important contributor to CoL (42 GSDs, representing >93.000 species)
- CoL appreciates our input and feedback, through editorial board, global team & board of directors
- Question of CoL to be more pro-active: make sure that we notify them of new lists/major updates ... so they can implement these in WoRMS (after approval by the CoL taxonomic team if there would be conflicts with existing lists)

Plans 2017-2018

- Finalize MilliBase & Turbellaria portals; launch RAS & DiatomBase portals
- New WoRMS website, logo + communication 10 years existence
- Contribution to Psammonalia newsletter of the benthic meiofauna community, on benthic content of WoRMS (upon request of Vadim Mokievsky), as an e-resource for the community. Will be for the December issue. Vadim = chair-man of International Association of Meiobenthologists
- Representation at FishBase symposium (Sept 2017, Tervuren) to discuss closer collaboration
- Representation at WIOMSA (Oct-Nov 2017, Tanzania) to re-initiate AfReMaS activities. (WIOMSA: Western Indian Ocean Marine Science Association)
- Traits:
 - Body size – qualitative approach
 - Functional group – finalize & verify benthic/pelagic trait
 - Upload traits from European macro-algae & European seabirds
- Organize new series of workshops (LifeWatch funded) (max 4).
- Continue WoRMS-IRMNG & WoRMS-OBIS work