

Report of the first marine Taxonomic Editors Workshop, Flanders Marine Institute, Ostend, 20-21 June 2008

Prepared by Mark J. Costello and Ward Appeltans

The workshop agenda and list of delegates are available at
<http://www.marinespecies.org/workshop>

Presentations

Edward Vanden Berghe described how OBIS was cleaning up species names in its database. OBIS could not use authority and higher ranks alone because they were poorly standardised across the over 250 datasets published through OBIS. Misspellings were common, e.g. 79 variations of *Etmopterus*. However, most errors were singletons, so cleaning reduced the number of 'rare species' in OBIS from about 45,000 to 37,000. However, with assistance from Nicolas Bailly using FishBase and the Catalogue of fishes, a cleaning of fish names reduced the number of 'rare names' from 2500 to 600. Edward invited taxonomic editors to assist with the cleaning of the names.

Ward Appeltans presented the WoRMS website and the current status of its content. With clear examples Ward showed us how data can be added/edited/deleted and retrieved using the online interface. The description of the system and a list of future developments is provided in a Word document.

Dennis Gordon explained the recurring demand for a consensus classification to facilitate data management. Parts of WoRMS, ITIS and CoL were clearly out of date and in principle, they wished to agree on one system to facilitate data exchange that would be reviewed at five-year intervals. He distinguished between classification and phylogeny. It seemed the audience agreed that a complete phylogenetic classification was not what WoRMS wanted as it would be too complex for users. However, the management classification should not contradict phylogeny. Another approach was classification based on degree of adaptation ("Darwinian"). This was likely to be intuitive to many users but will not always reflect phylogeny well and is not widely used.

Mark Costello reviewed how past estimates of how many marine species were known (described) and unknown were derived. He argued that methods based on extrapolation (e.g. rates of discovery, by habitat or area) were too variable (and arguably not justified) by our current state of knowledge. Instead he proposed the WoRMS editors collaborate to provide a new estimate by (a) documenting how many species have been described in their taxon as well as possible, (b) recording proportions of undescribed species in their taxon known to exist from sampling collections in particular habitats and geographic areas, and (c) comparing this data to provide a simpler estimate of how many species remain to be described organised by taxon, geography and perhaps habitat. This could provide a popular multi-author paper involving all the WoRMS editors. He proposed to begin the process by contacting editors later this year, and tracking the numbers of species registered in WoRMS.

Philippe Bouchet analysed the rate of description of new species from several bibliographic databases, to extend the findings of his 2006 paper on the magnitude of marine biodiversity.

There were often difficulties in distinguishing what was marine, what was fossil or recent, in classifying species, and it was not known how many new names would prove to be synonyms. ZooTaxa published most but still only 10% of species descriptions, with Journal of Natural History at 6%, Int. J. Syst. Evol. (bacteria) 5.5% and all others < 4%. Several amateur journals published new descriptions yet their future may be less permanent than more established journals. Remarkably, 62% of the journals are not listed by ISI and have no Impact Factor. Only 15.5% have IF > 1, and these were the microbiology, phycology and parasitology areas where there are fewer journals. Perhaps taxonomists do not care about IF. The low IF may be addressed by reducing the number of journals used so those remaining get cited more. The analyses found 3,826 authors described species over 4 years (4.3 species/person), which seems to contradict claims that there are not enough taxonomists! However, < 10% of these actually do the species descriptions and others are collectors or ecologists. 50% of the authors only described one species. The tradition in microbial taxonomy often involves many authors and they must publish new species in one journal. This results in the journal having a very high Impact Factor. Philippe offered to work with Taxonomic Editors on taxon-specific details of bibliographic analyses.

Discussion

Where providers were concerned about people using images they displayed on WoRMS, such images could be uploaded at low resolution so they would not be usable in print media and would be faster to display on web pages.

WoRMS should consider the use of Creative Commons licensing for images, i.e. they can only be used with attribution of the source (e.g. Photographer name, Accessed [WoRMS, date]).

Must all data in WoRMS be previously published as was the model for ERMS? Preferably, but editors should add notes where necessary to explain misuse of names, alternative classifications of species, etc.

Should editors correct entries they can see in MASDEA (African database)? Yes, but they do not have too. This information IS visible through WoRMS.

GBIF focuses on specimen based information, and would welcome locations of type localities and specimens from WoRMS.

Christian Emig recommended GBIF use WoRMS Phoronida and not CoL as that in CoL was out of date.

Yuri Roskov explained that Species 2000 peer-reviews its datasets and knows it needs to replace some, and welcomes contributions from WoRMS.

Tom Orrell explained that ITIS has recently obtained funds to develop an interface allowing taxonomic editors to update taxonomic information as WoRMS does.

Wolfgang Sterrer said 4 to 5 different groups wanted copies of his Gnathostomulida database. He would prefer one location that distributed the database. This one of the purposes of WoRMS, as WoRMS provides data to Species 2000, Catalogue of Life, and others based on formal requests, as well as users being able to browse information online.

Deng Palomares explained that the aim of SeaLifeBase is compiling already published data on species biology and ecology for 'global' data analyses; just like FishBase does. A future step is to clarify habitat and feeding types.

Estel Balian asked that WoRMS compare its taxonomic expertise and gaps with FADA (Freshwater). Mark Costello agreed to follow up with her and Hendrik Segers as many WoRMS taxa had significant numbers of freshwater species, and some largely freshwater taxa had some marine species (e.g. Cladocera, Branchiura, Nematomorpha, Rotifera).

EoL needed existing resources like WoRMS for its content. EoL was building a 'Lifedesk' tool for describing species.

Paddy Patterson and Dave Remsen emphasised that we need all species 'names' in a communal environment, including linking them to the accepted name. This allows tracking of what species past names used in the literature may refer to. While not a simple matter, matching these relationships was something EoL and GBIF were keen to do. WoRMS would assist this process.

Christos Arvantidis reminded us that the success of ERMS was not just in creating a register of species, but in bring the taxonomic community together. WoRMS had the same potential.

What should WoRMS prioritise?

Agreed that the minimum required was the

Accepted name of a species (i.e. Genus, specific epithet, author, year),
important synonyms (nomenclatural and taxonomic status of names),
and family, key literature, and environment (e.g. marine).

Information on type locality, distribution, and location of type specimens was very desirable.

WoRMS already facilitated inclusion of a wide range of information, from biology to distribution and images, and would continue to provide this service for the Taxonomic Editors.

Comments arising included:

Geoff Boxshall: that distribution made the list far more useful as it then allowed regional and national inventories, and indicating possible species relationships.

Christian Emig: that ecology and distribution are part of taxonomy, and that a bibliography was essential. The best way to save this information was to record it in a database.

Nicolas Bailly: additional attributes are often necessary to sell a project to a funding agency (e.g. invasive, conservation or commercial importance).

Philippe Bouchet: who is custodian of species 'attributes' information.

It was agreed that other experts may contribute valuable information to WoRMS (e.g. ecological feeding types). Such sources needed to be recognised and not attributed to the

Taxonomic Editor. This will require some modifications to how information is presented on the website.

Management higher classification hierarchy

Agreed this should be user-friendly, and while congruent with phylogeny it would not show a complete phylogeny.

Agreed it should be stable for several years, and avoid adopting recent proposals (especially for rapidly evolving bacterial and protists phylogenies) before the community has had time to respond and adopt them.

Yuri Roskov and Nicolas Bailly: a key use of the classification was to avoid overlooking and duplicating taxa when combining sources in CoL. Also, old, well known names need to be retained in some way to guide users unfamiliar with new terminology.

Tom Orrell: emphasised the need for one hierarchy as a management tool for ITIS and CoL.

Mark Costello: the higher classification did not affect most Taxonomic Editors because they controlled classification within a group, typically from order to genus. Thus decisions on the higher classification would need to be made by the WoRMS Steering Committee, following advice from the Editorial Board (as is now being sought).

Kristian Fauchald: avoid new hybrid systems (these may confuse everybody and please nobody).

Paddy Patterson, Edward Vanden Berghe: multiple classifications with cross-walks were possible. Are they a priority?

Dave Remsen: could also have thematic classifications, e.g. trophic level, geographic; and classification by major environment is already occurring.

Claude de Broyer: it would be useful to add 'benthic' and 'pelagic' attributes to WoRMS species.

Gary Rosenberg: perhaps it would be possible to allow users and editors design their own individual systems.

Paddy Patterson: This is possible, see <http://starcentral.mbl.edu/custar/>

Dave Remsen: GBIF classifies incoming data using algorithms.

Philippe Bouchet: in Mollusca there were 4,000 family names and some 1,200 names above family. Older family names have a long and well-known history, and their species are easily recognised, even if some have been found to be phylogenetically incorrect. Any new classification must remain intelligible to existing users and help interpret past literature. Names in levels higher than family have much shorter life-spans.

Agreed to use multiple classification options when they become available.

Enrique Macpherson proposed we write to ISI and ask them to provide a grouping of taxonomy journals. Mark Costello agreed to follow up with Enrique about this idea.

Management of the marine taxonomic databases hosted by VLIZ in Aphia

Governance and ownership

The content of WoRMS, like its predecessor the European Register of Marine Species (ERMS), has been largely contributed by individual scientists working for many organisations. The database infrastructure has been constructed by Flanders Marine Institute (VLIZ) using funds from a variety of public sources, notably the European Commission. This collaboration has been enabled by the vision of the Flander's government in establishing a world-leading marine biological data centre to support scientific research and information management.

All contributors to ERMS signed an agreement (Appendix 1) giving ownership of their contribution to the Society for the Management European Biodiversity Data (SMEBD); while in not limiting whatever other uses they may wish to make of their contributions. In doing so, they became life-members of SMEBD, and elect its Council. The Council appoints committees to oversee resources under its responsibility. At present these include ERMS and Fauna Europaea. The committees authorise who hosts the databases, and oversee its management. This process retains ownership (and Intellectual Property Rights) of the content with the scientific community, while providing a mechanism for the collective management and sustainability of the resources.

SMEBD is the only organisation representing individual taxonomic editors, and as such can play a unique role in scientific activities. It is a full partner in the EDIT and PESI projects. There are over 700 members in SMEBD at present, and it serves as the human link between successive EU projects that create infrastructures (e.g. ERMS, MarBEF, Fauna Europaea, EDIT, PESI, Species 2000 europa).

SMEBD has authorised VLIZ to be the host of ERMS, and the University of Amsterdam to host Fauna Europaea, with a review of the relationship in five years time. It is understood that if these organisations can no longer maintain the online databases, that they will return them to SMEBD who will seek new hosts.

At its recent AGM, SMEBD agreed to change its name to the Society for the Management of Electronic Biodiversity Data (SMEBD) to recognise that the resources it is currently and potentially responsible for may not be limited in scope to Europe, and that a significant number of its members are from outside Europe.

Proposed action: All contributors to WoRMS and other databases sign agreement and become members of SMEBD.

Steering committee

The Steering Committee (SC) is responsible for selecting new and replacement Taxonomic Editors, managing issues that may arise, and seeking funding to support the maintenance and development of the taxonomic resources. Up to 10 SC members will be elected by the Taxonomic Editors at an annual election.

In the first instance elections will be for 1 and 2 year terms so as to ensure overlap, and the SC should continue to have some rotation of members thereafter. However, all members will be re-electable.

So as to engage the wider scientific community, SC members are not limited to SMEBD members. For example, the SC may include potential editors for taxa without online databases, and representatives of end-user and collaborating organisations. Nominations may include self-nominations. The SC will elect its own Chair, and will consider any such recommendations from the membership, who will be the Editor-in-Chief of WoRMS. Individual SC members should have particular responsibilities. The Data Manager will be an ex-officio member, and the host institution may also nominate a representative to the SC.

The higher levels of the taxonomic classification, from Order to Kingdom, will be determined by the Steering Committee, following consideration of suggestions from the Taxonomic Editors.

Proposed action: Agree and/or modify above structure, and set timeline for election of new Steering Committee.

Editorial Board

Taxonomic Editors will be selected by the Steering Committee, and invited by the Editor-in-Chief and Data Manager to take responsibility for particular taxa in a particular geographic area. They will be referred to as Taxonomic Editor (Taxon, geographic region), e.g. Rob van Soest, Taxonomic Editor (Porifera, world). An Editor may have responsibility for several taxa, and at any level in the taxonomic hierarchy from Genus to Phylum.

Taxonomic Editors may, in consultation with the SC, appoint Associate Editors. *Associate Taxonomic Editors* are coordinated by a Taxonomic Editor, and are typically responsible for editing smaller groups of species (e.g. genera, families).

Taxonomic Editors and/or the SC, may ask scientists to review parts of the database. Such persons will be called *Reviewers* (Taxon, region) reflecting the temporary nature of their activity. They may not make changes to the database but their assistance would be acknowledged on the website. Similarly, individuals who contribute to species pages under the direction of Editors or the Data Manager, such as staff or contractors, would be acknowledged but not be considered Editors.

Thematic Editors may contribute related information to the database(s). For example, ecologists interested in feeding types, invasive species, toxic algae, or commercial species. [Note there are no Thematic Editors at present, and the present database(s) need to be modified to distinguish who is responsible for what on webpages.] Taxonomic Editors may approve such additions to the species pages.

The *Chief Editor* is responsible for coordinating the SC and Editorial Board, and working closely with the Data Manager on WoRMS operations and development. Either person, and individual Editors, may ask the SC to address certain issues, from funding opportunities to changes in the infrastructure content, design and function.

The *Data Manager* is responsible for maintaining the resources so they are accessible online, providing editors password access to their taxa, supervising modifications and development of the infrastructure, and reporting to the Chief Editor and SC on progress, issues that may arise, and future plans. The technical staff report to the Data Manager. The Data Manager will seek advice and approval of the SC through its Chair on planned changes to the data management system.

Coordinating the activity of the editorial board, with well over 100 editors and growing, is a significant task. A simple process of checking that editors are keeping check on the currency of their taxa is desirable, and regular communication to see if they need assistance, and/or would like to involve additional experts. At present, this task falls to the Chair of the Steering Committee and Data Manager. However, a position of editorial assistant, or Secretary to the Board may be worth considering.

Funding

The SC, host institution and editors will work to secure funding for the development of WoRMS in both content and functions. This may include submitting proposals to research funding agencies, governments, foundations, industry, and other sources. It may be achieved by research projects and infrastructure development contracts that improve content and system function, develop new products, and/or offer services to end-users.

World versus Regional registers

At present, the database contains a range of regional and global species databases. The taxonomically authoritative regional registers provided the foundation for WoRMS in both content and methodology. In some cases, world and regional editors are the same person. However, in others there are different world and regional editors.

A method to harmonise their editing is necessary. The technical integration of world and regional registers creates new content in WoRMS that may not have been validated by the authorised Taxonomic Editor. One approach is for existing regional and new world editors to become co-editors of the world list, dividing their responsibilities by where taxa are distributed. This may be especially useful for taxa with so many species that it is difficult for one person to keep up to date with all the literature.

Where different views on the validity of species names or their classification exist, and/or are emerging (e.g. a recent publication proposing significant changes but for which the community has not had time to consider), the editors are encouraged to note these on the species pages.

Similar integration and validation issues can arise when additional non-taxonomic data may be included on the species pages; e.g. common names, environment, literature, distribution, habitat, biology, morphology, images. At present this occurs without the editor being notified which is not desirable. Pages probably need to be split into key information approved by the Taxonomic Editor, and supplementary information added by others.

Proposed actions:

- Taxonomic Editors of world registers will have priority over regional and other editors, but will consider joining forces to co-edit world lists.

- World and Regional taxonomic editors will mutually agree approaches to editing the species information, either by prior discussion of changes, notifying each other of changes made, or sub-dividing their taxonomic areas of responsibility.
- Species pages will be re-designed to distinguish core information approved by the taxonomic editor, and supplementary information.

Citation of contributions

Current citations:

- WoRMS (2007). The World Register of Marine Species. Available online at <http://www.marinespecies.org>. Accessed on [date].
- Rob van Soest; Nicole Boury-Esnault; Dorte Janussen; John Hooper (2005). World Porifera database. Available online at <http://www.marinespecies.org/porifera>. Consulted on 2008-05-31
- Tom Artois; Ernest Schockaert (2005). World database of Proseriata and Kalyptorhynchia. Available online at <http://www.marinespecies.org/rhabditophora>. Consulted on 2008-05-31
- Deprez, T. & all 2005. NeMys. World Wide Web electronic publication. www.nemys.ugent.be, version (5/2008).
- Les Watling (2005). Cumacea world database. Available online at <http://www.marinespecies.org/cumacea>. Consulted on 2008-05-31
- Emig Christian C. (2006). Brachiopoda world database. Available online at <http://www.marinespecies.org/brachiopoda>. Consulted on 2008-05-31
- Emig Christian C. (2007). Phoronida world database. Available online at <http://www.marinespecies.org/phoronida>. Consulted on 2008-05-31
- Bamber, R.N. & El Nagar, A. (2007*). Pycnabase: Pycnogonida World Database. Available online at <http://www.marinespecies.org/pycnobase/>
- *or as appropriate to future updates.
- Sabine Stöhr & Tim O'Hara (2007). World Ophiuroidea database. Available online at <http://www.marinespecies.org/ophiuroidea>. Consulted on 2008-05-31
- Schotte M., Boyko C. B., Bruce N. L., Markham J., Poore G.C.B., Taiti S., Wilson G.D.F. (Eds) (2008 onwards). World List of Marine Freshwater and Terrestrial Isopod Crustaceans. Available online at <http://www.marinespecies.org/isopoda>. Accessed on 2008-05-31
- Costello, M.J.; Bouchet, P.; Boxshall, G.; Emblow, C.; Vanden Berghe, E. (2004). European Register of Marine Species. Available online at <http://www.marbef.org/data/erms.php>. , Consulted on 2008-05-31.
- No citation was found for following on their web pages but exist in the IMIS database:
De Broyer C, Clarke A, Koubbi P, Pakhomov E, Scott F, Vanden Berghe W and Danis B (Editors). The SCAR-MarBIN Register of Antarctic Marine Species (RAMS), [date accessed]. World Wide Web electronic publication. Available online at <http://www.scarmarbin.be/species.php>
- Vanden Berghe, E; Costello, M.J.; Van Guelpen, L.; Pohle, G. (eds). 2005. North Atlantic Register for Marine Species. World Wide Web electronic publication. <http://www.vliz.be/vmdcdata/narms/index.php>, version 1.0/2005. Consulted on [yyyy-mm-dd]
- VLIZ. Taxonomic Information System for the Belgian coastal area. World Register of Marine Species, Flanders Marine Institute, 10 Aug 2004, Oostende, Belgium, Version: 1, SQL-server, <http://www.vliz.be/vmdcdata/tisbe/>
- Vanden Berghe, E. (2004). Data from MASDEA, Marine Species Database for Eastern Africa, provided by Flanders Marine Institute (VLIZ)- <http://www.vliz.be/vmdcdata/Masdea/index.htm>; searched on dd/mm/yyyy.
- North Sea Benthos Survey (NSBS):

Craeymeers J., A. Kuenitzer, H. Rumohr, P. Kingston, D. Basford, C. Heip, G. Duineveld, T. Soltwedel, J.-M. Dewarumez, 1986: North Sea Benthos Survey, provided by Flanders Marine Institute (VLIZ)- <http://www.vliz.be/Vmdcdata/nsbs/index.htm>; searched on dd/mm/yyyy.

No citation was found for one database: North Sea Benthos Project 2000 (NSBP)

Comments:

1. One had no recommended citation, five citations were not obvious from the website.
2. All of above except the World list of Isopoda indicate authorship as they do not use the term 'editor(s)'. This is an error for ERMS and may be for others.
3. The normal style of citation for people names is surname followed by initials; only two examples follow this.
4. Usually term 'Date accessed' is used instead 'consulted on'.
5. The date format is year-month-day, the ISO recommended standard, although not widely used.
6. The above allows citation of databases external to Aphia (see Deprez, 2005).
7. The year of several of the databases suggests the citation of several may need updating.
8. Who should be named as the editors of WoRMS? The primary coordinators (Appeltans, Costello, Vanden Berghe), all the Steering Committee, or many people?

Is this common style for citing web resources concise and sufficient?

[Surname initials, surname initials]. (year). [Title of website or webpage]. [url]
Accessed [date year-month-day].

What about taxa within databases? They may have different editors than the composite database. There is no clear advice on this from the databases.

e.g. within ERMS:

Bartsch I. (2008) Acarina. In: European Register of Marine Species.

www.marinespecies.org Accessed [date year-month-day].

Bellan-Santini D., Costello M.J., Dauvin J.-C., Wader W. (2008). Amphipoda. In:

European Register of Marine Species. www.marinespecies.org Accessed [date year-month-day].

Is this sufficient, i.e. not to include citation of the overall editors of ERMS as one would if above were chapters in a book?

Agreed

To cite all databases as:

Editor(s) [surname initials,]. Year. Title. Url. Accessed [date].

e.g.

Schotte M., Boyko C. B, Bruce N. L., Markham J., Poore G.C.B., Taiti S., Wilson G.D.F.

(Eds) (2008). World list of marine, freshwater and terrestrial isopod crustaceans.

<http://www.marinespecies.org/isopoda>. Accessed 2008-05-31.

To cite sub-databases and single species web pages like chapters in a book:

Editor(s) [surname, initials;]. Year. Title. In: editor(s), Title. Url. Accessed [date].

e.g.

Markham J. 2008. Bopyridae. In: Schotte M., Boyko C. B, Bruce N. L., Markham J., Poore G.C.B., Taiti S., Wilson G.D.F. (Eds) (2008). World list of marine, freshwater and terrestrial isopod crustaceans. <http://www.marinespecies.org/isopoda>. Accessed 2008-05-31.

These citations would be automatically provided on all appropriate pages validated by the editors to (a) give highly visible recognition to the editors, and (b) so users can ‘cut and paste’ the citation easily for their use.

WoRMS funding

WoRMS and its component databases have benefited from considerable funding in the past decade. In addition to the cash contributions (Table below) that funded coordination, meetings, travel, and building content and the technical infrastructure, there has been considerable time committed by scientists' employer organisations. While individually this may be modest, collectively it probably exceeds the cash cost below. For example, over 150 people contributed to ERMS over two years. If each contributed 5 days (an underestimate), then at a day-rate of €800 (includes overheads etc.), this would exceed €1,200,000. At present, WoRMS has over 100 Taxonomic Editors. Their contributions will exceed €400,000 p.a.

Source or project	€ Total budget	€ Balance unspent
ERMS 1.0 1997-1999 (FP5 MAST)	385,000	0
ERMS 2.0 from Species 2000 europa	12,000	0
CORONA NSF NARMS	10,000	0
WoRMS 2004-2005 OBIS US\$40,000 (CoML, Sloan Foundation)	25,000	0
ERMS 2.0 2004-2008 (FP6 MarBEF)	300,000	0
VLIZ various projects 2000-2010 (e.g. TISBE, MASDEA)	250,000	0
ICoMM (CoML, Sloan Foundation)	60,000	0
WoRMS 2007 Lounsbery Foundation US\$50,000	40,000	*40,000
WoRMS 2008 GBIF	30,000	30,000
WoRMS 2007-2008 OBIS US\$20,000 subcontracts (Sloan Foundation)	15,000	*15,000
ERMS + WoRMS 2008-2010 PESI (FP7)	400,000	*400,000
Total projects	1,527,000	485,000
Contribution of Taxonomic Editors	1,200,000	400,000
TOTAL	€ 2,727,000	€ 885,000

* Largely committed for particular tasks.

Call for Funding Proposals

The Lounsbery Foundation and GBIF funds are largely uncommitted at present. The former is committed to building WoRMS content, including digitization of information from the literature under the recommendation of Taxonomic Editors. The GBIF funds may be used for this and other purposes (e.g. travel, workshops). The funds are respectively managed by Dr Edward Vanden Berghe through the Rutgers – the State University of New Jersey, and Dr Mark Costello through the University of Auckland.

At the recent workshop of Marine Taxonomic Editors currently and potentially involved in establishing the World Register of Marine Species, the following call for proposals was agreed. The aim is to fill gaps in WoRMS by compiling registers of accepted species names validated by leading taxonomic experts, accompanied by at least important synonyms, key literature and environment (e.g. marine, freshwater). Other information, including type locality, is desirable but not essential.

Current and potential Taxonomic Editors are invited to submit short (1-2 page) proposals including the following information:

1. Who leads and will do the work, including their contact details.
2. What gaps in WoRMS it seeks to fill, and why these are important.
3. What work is proposed, and what the deliverable(s) will be (e.g. number of new species added to WoRMS).
4. When will it be conducted and completed.
5. What is the budget, including contributions from other sources.
6. Note any aspects of the proposal that contain any contingencies (e.g. matching funding, other support).

Submission

Applications should be for up to €5,000 and submitted by email to m.costello@auckland.ac.nz by 31st July 2008. Depending on the outcome of submissions, there may or may not be further calls for proposals.

Proposals will be evaluated by Costello, Vanden Berghe, and Taxonomic Editors to be invited that are not involved in the proposals submitted.

APPENDIX

Society for the Management of European Biodiversity Data

STANDARD AGREEMENT WITH A CONTRIBUTOR

AGREEMENT WITH:

This document establishes the basis on which data and/or intellectual property is provided to the World Register of Marine Species (WoRMS). By contributing to WoRMS you will be benefiting the scientific community in general by assisting the production of good quality information of use to scientists, regulators, students and society.

WoRMS is managed by a committee established by a Council elected from members of the Society for the Management of European Biodiversity Data (SMEBD), legally incorporated in Ireland (www.smebd.eu). All contributors to WoRMS are life-members of SMEBD. SMEBD owns, and authorises dissemination and revisions of WoRMS, and nominates the database host institute. Signatories to these Agreements with Contributors become members of SMEBD and thus have a say in its management.

The contributor hereby

1. agrees to voluntarily provide data, information, opinion, or other expert assistance to the WoRMS,
2. retains the right to use and publish any data and intellectual property created by the contributor,
3. authorises the project to store, compile, modify, and disseminate data provided and derived by any means (e.g. electronic, World Wide Web, book),
4. recognises that products of the WoRMS are the copyright of SMEBD.

SMEBD hereby agrees to

1. make WoRMS publicly accessible online,
2. acknowledge the contribution of the contributor in publications of the WoRMS,
3. provide the contributor with a copy of WoRMS publications,
4. record that the contributor is a member of the SMEBD and as such involve them in the affairs of the SMEBD, including the right to elect individuals to the SMEBD governing Council.

The agreement shall remain in force until either party notifies the other in writing that it wishes to discontinue it. Such notification would not be retrospective. This agreement will come into force when the contributor has provided data or other documented expertise or assistance to the WoRMS project.

Authorised signature on behalf
of SMEBD

Authorised signature on behalf
of the Contributor named above

Note the Society plans to change its name to the Society for the Management of Electronic Biodiversity Data