

Contribution of Tropical Deep Sea Benthos to the World Register of Marine Species



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On behalf of the WoRMS Data Management Team

Vlaams Instituut voor de Zee vzw
Flanders Marine Institute

WoRMS - background

WoRMS aims to provide the most authoritative list of names of all marine species globally, ever published

- Not just a name-index, but expert-based taxonomic database
 - > 250 taxonomic editors
 - Steering Committee (12+1)
 - Data management team (5)
- Permanent host institute: Flanders Marine Institute (VLIZ)
- Web-based system, including web-services
- International standards
- Background
 - 2004: MarBEF EU FP6 => online European Register of Marine Species - ERMS
 - 2007: further development to World Register

WoRMS - content

A lot more than just taxon names & their relationship...

- Unique & stable identifier for each taxon name
- Environment
- Distributions
- Specimen information (museum + type locality)
- Vernaculars
- Traits
 - Feeding type
 - Host-parasite relations
 - Body size
 - Fossil range
 - Skeleton (calcareous or not)
- Notes
- Identification keys
- Links
- Images

Based on

- References
- Expert opinion

WoRMS & the Tropical Deep-Sea Benthos

- Available references:
29 MUSORSTOM/TSBD Volumes => only 3 without any reference in WoRMS
 - “Tropical deep-sea benthos”: 45 (3 with pdf)

WoRMS Source list

45 sources found. Click on one of the source listed below to view the details for that source. [[new search](#)]
Export results [[BibTex](#)] [[RIS](#)]

Ahyong, S. T. (2013). Stomatopoda collected primarily by the Philippine AURORA expedition (Crustacea, Squilloidea). In: Ahyong S.T., Chan T.-Y., Corbari L. & Ng P.K.L. (eds), *Tropical Deep-Sea Benthos 27: 85-106. Mémoires du Muséum national d'Histoire naturelle, 204. Muséum national d'Histoire naturelle, Paris.*

Bamber, R. N. (2004). Pycnogonids (Arthropoda: Pycnogonida) from New Caledonia, Fiji and Tonga: new records and new species. In: Marshall, B. & Richer de Forges, B. (eds), *Tropical Deep-Sea Benthos, Vol. 23. Mémoires du Muséum national d'Histoire naturelle, Paris, 191.*

Beu A.G. (2008) Recent deep-water Cassidae of the world. A revision of *Galeodea*, *Oocorys*, *Sconsia*, *Echinophoria* and related taxa, with new genera and species (Mollusca, Gastropoda). In Héros V., Cowie R.H. & Bouchet P. (eds), *Tropical Deep-Sea Benthos 25. Mémoires du Muséum National d'Histoire Naturelle 196: 269-387.*

- “Résultats des campagnes MUSORSTOM”: 109 (13 with pdf)

WoRMS Source list

109 sources found, showing records 1-100. Click on one of the source listed below to view the details for that source. [[new search](#)]
Export results [[BibTex](#)] [[RIS](#)]

Amaoka, K.; Mihara, E.; Rivaton, J. (1993). Pisces, Pleuronectiformes: Flatfishes from the waters around New Caledonia. - A revision of the genus *Engyprosopon*. p. 377-426. In A. Crosnier (ed.) *Résultats des Campagnes MUSORSTOM, Volume 22. Mém. Mus. natn. Hist. nat. (158):377-426.*

Amaoka, K.; Rivaton, J. (1991). Pisces Pleuronectiformes: A review of the genus *Tosarhombus* (Bothidae) with descriptions of two new species from Saya de Malha Bank (Indian Ocean) and the Chesterfield Islands (Coral Sea). p. 449-466. In A. Crosnier (ed.) *Résultats des Campagnes MUSORSTOM, Volume 8. Mém. Mus. natn. Hist. nat., (A), 151:449-466.*

Améziane N (1997) Echinodermata Crinoidea: Les Pentacrines récoltés lors de la campagne KARUBAR en Indonésie. In: Crosnier A, Bouchet P (eds), *Résultats des Campagnes MUSORSTOM 16. Mémoires du Muséum National d'Histoire Naturelle 172:627-667, 15 fig.*

WoRMS & the Tropical Deep-Sea Benthos

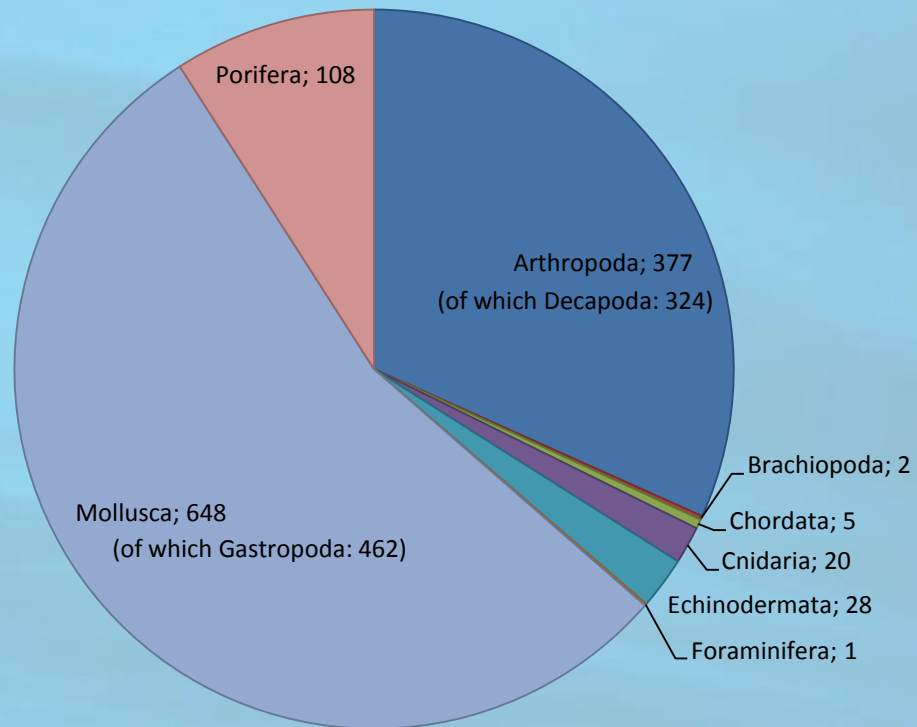
- TDSB newly described species: what is available in WoRMS?

MUSORSTOM/TDSB Volume	year	# sp. TDSB	# sp. WoRMS
1	1981		
2	1985/1986		
3	1987		
4-5	1989		
6	1990		
7-8-9	1991		
10-11	1993		
12	1994		
13-14	1995		
15	1996		
16-17-18	1997		
19	1998		
20	1999		
21	2000		
22	2001/2002		
23	2004		
24	2006		
25	2008		
26	2010		
27	2013		
28	2015		
29	2016		
TOTAL			

→ = 72%

WoRMS & the Tropical Deep-Sea Benthos

newly described TSDB species in WoRMS, per phylum



WoRMS & the Deep-Sea

- Thematic Deep-Sea Register within WoRMS
- ~500m boundary
- 25,270 species listed

WoRDSS: The World Register of Deep-Sea Species



[Home](#) | [Search taxa](#) | [Browse taxa](#) | [Deep Sea ID App](#) | [Keys & guides](#) | [Images](#) | [Statistics](#) | [Contribute](#) | [Log out](#)

World Register of Deep-Sea Species

Welcome to the World Register of Deep-Sea Species (WoRDSS), a taxonomic database of deep-sea species based on the [World Register of Marine Species](#) (WoRMS). This site was launched in December 2012 as a project of the [International Network for Scientific Investigation of Deep-sea Ecosystems](#) (INDEEP).

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](#). A secondary goal is to accumulate high quality [specimen images](#) of deep-sea species and to present these on both the website and the iOS app (Deep Sea ID, currently in development) that allows offline-viewing of the complete database and imagery to assist with identifications at sea and in the laboratory. Through WoRDSS, we are also providing [taxonomic references](#) (sources) 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. We welcome [contributions and corrections](#).

What is a deep-sea species?

There is no single definition of 'deep-sea'. Traditional classifications have used the

Quick search - Scientific name

Search

e.g. *Gorgonocephalus arcticus*

25,270 species listed

Tweets by [@DeepSeaSpp](#)



Deep-Sea Species
[@DeepSeaSpp](#)



Photographer David Shale kindly gave us permission to use his pictures in our [#DeepSeaID](#) app. Read his amazing story [dailymail.co.uk/sciencetech/ar...](#)



British photographer captures st...
David Shale from Tusbury, in Devo...
[dailymail.co.uk](#)

WoRDSS & Tropical Deep-Sea Benthos

- TDSB = 1189 newly described deep-sea species in last 40 years
=> 400 of them included in WoRDSS (=34%)
- Improvements & updates of WoRDSS possible
=> benefits for Tropical Deep-Sea Benthos

Polychaeta PATH TREE  



© David Shale ([details](#))

Name: Polychaeta
AphiaID: 883

Authority: Grube, 1850



Rank: Class









Classification: [Biota](#) (Life) > [Animalia](#) (Kingdom) > [Annelida](#) (Phylum)

Status: Accepted


Vernaculars:

English: bristle worms
Dutch: borstelwormen


Animalia PATH DETAIL  

-  **Annelida**
segmented worms >
-  **Arthropoda**
arthropods >
-  **Brachiopoda**
lamp shells / lamp shells >
-  **Bryozoa**
moss animals / moss animals / sea mats >
-  **Cephalorhyncha**
Phylum >
-  **Chaetognatha**
arrow worms >
-  **Chordata**
Phylum >
-  **Cnidaria**
cnidarians >






Deep Sea ID
A Deep-Sea Field Guide



Presented By
The World Register of Deep-Sea Species



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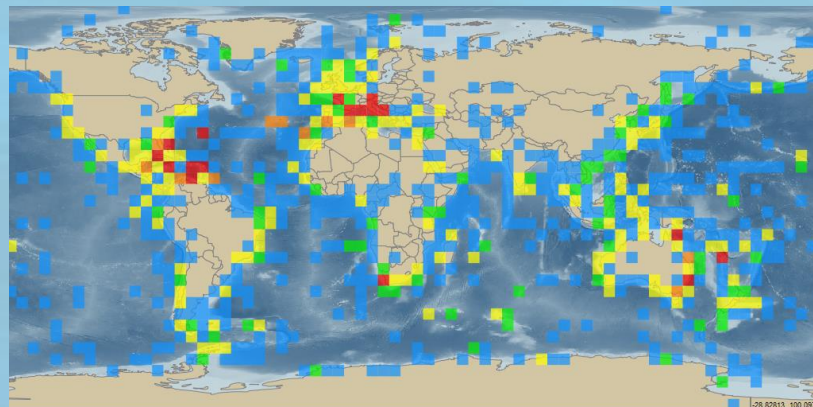
    

WoRMS & TSDB – Towards the future

- Fill possible gaps in WoRMS
 - Access to journals
 - Taxonomy, type localities, specimen info, images ...

⇒ DMT can assist in catching up with previous TSDB volumes

⇒ DMT can assist in document type localities
- Fill possible gaps in World Register of Deep-Sea Species
- Link with Ocean Biogeographic Information System (OBIS):
 - Type localities from WoRMS shared with OBIS
 - Option: make campagne data (what-where-when) publicly available



WoRMS Editorial Board (2015). **Type locality distributions from the World Register of Marine Species.** Available from <http://www.marinespecies.org> at VLIZ. Accessed on 2016-10-19.

WoRMS – importance of our editors



WoRMS Achievement Award

To recognize the editor or group of editors that promoted an outstanding contribution to the development or content of the WoRMS and/or its associated databases

First WoRMS Achievement Award was attributed in March 2016

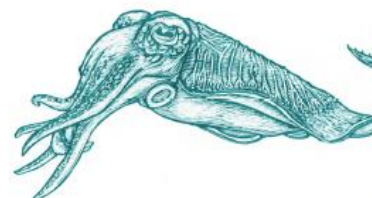
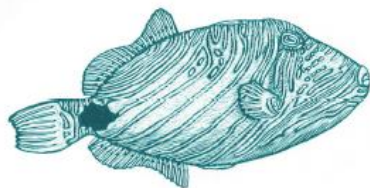


WoRMS

World Register of Marine Species



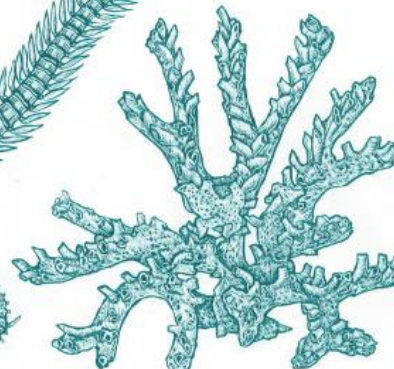
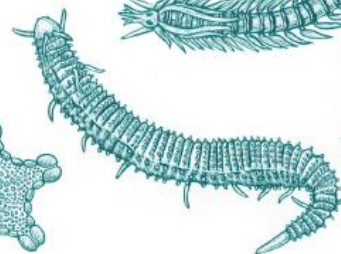
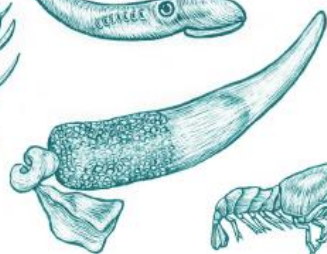
Philippe Bouchet



Achievement Award

For outstanding contributions to the World Register of Marine Species

2016



Thank you!

Questions?

www.marinespecies.org – info@marinespecies.org

Taxonomy is not big data, it is complex data

Thierry Bourgoin –
Muséum National d'Histoire Naturelle (MNHN), Paris