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## Beyond classical Linnaean taxonomy: how temporary names are being integrated into the World Register of Marine Species (WoRMS)

### Presenter

Leen Vandepitte

### Authors

**Leen Vandepitte** (Flanders Marine Institute (VLIZ) • Belgium)**Tammy Horton** (National Oceanography Centre • United Kingdom)**Muriel Rabone** (Natural History Museum London • United Kingdom)**Shane T. Ahyong** (Australian Museum • Australia)**Rüdiger Bieler** (Field Museum of Natural History, Chicago, USA • United States)**Christopher B. Boyko** (Department of Biology, Hofstra University • United States)**Simone N. Brandão** (Division of Invertebrate Zoology, American Museum of Natural History • Brazil)**Gustav Paulay** (Universidade Federal Rural de Pernambuco • United States)**Erik Simon-Lledo** (Unidade Acadêmica de Serra Talhada • Spain)**WoRMS Data Management Team** (Florida Museum of Natural History, University of Florida • Belgium)

### Abstract

Species are fundamental units of biodiversity and underpin communication in biology. Current advances in the fields of molecular biology and the growing use of image-based identifications have resulted in an explosion of temporary or informal species names globally, increasing the rate of discovery of undescribed species and cryptic species complexes. Given the pressure the ocean is under and the urgent need to estimate how many marine species actually live in our ocean, new species discoveries are currently being recognised and ‘named’ outside of the conventions of the classical Linnaean taxonomic system that has existed since 1753; these are often referred to as ‘temporary names’.

We recently defined two categories of temporary names: Type 1 names that are delineated in a local context but not further assessed; and Type 2 names that have been taxonomically assessed and recognised as either new or part of an unresolved species complex. The current challenge is to manage these temporary names in a robust and standardised manner, making them part of major data flows so they can contribute to global species registers, as well as including them in existing quality control procedures on taxonomic names. The temporary names can then be linked to formal Linnean names.

Aphia, the infrastructure underlying the World Register of Marine Species (WoRMS), has recently developed the possibility to document Type 2 temporary names, so these names can become part of nomenclatural databases, and thus contribute to endeavors to objectively estimate the number of existing species. Practical recommendations are available to all Aphia-WoRMS editors on how such names should be selected for entry and how they can be entered in a standardised way. These recommendations are a small step forward, but their broad adoption would support the robust integration of informal and formal taxonomies.