

## Research Infrastructures offer capacity to address scientific questions never attempted before: Are all taxa equal?

Research Infrastructures (RIs) are facilities, resources and services used by the scientific community to conduct research and foster innovation. LifeWatch ERIC has developed various virtual research environments, which include many virtual laboratories (vLabs) offering high computational capacity and comprehensive collaborative platforms that supporting the needs of digital biodiversity science. Over its 250 years of history, the taxonomic research community has developed a system for describing, classifying and naming taxa across multiple levels. For the marine biota, taxonomic information is organized and made publicly available through the World Register of Marine Species (WoRMS) that records more than 250,000 described valid species. Although scientists tend to assign an *equal* status (in terms of contribution to overall diversity) to each taxon used in taxonomy, biogeography, ecology and biodiversity, the question “*are all taxa equal?*” has never been tested at a global scale. We present evidence that this question can be addressed by applying relatedness indices (Taxonomic Distinctness) over the entire WoRMS metazoan tree. The RvLab, developed by the LifeWatchGreece RI, operating on a high-performance computer cluster, has been used to meet the high computational demands required for such an analysis at a global scale.

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Research Infrastructures (RIs) are facilities, resources and services used by the scientific community to conduct research and foster innovation. LifeWatch ERIC has developed various virtual research environments, which include many virtual laboratories (vLabs) offering high computational capacity and comprehensive collaborative platforms that supporting the needs of digital biodiversity science.

Over its 250 years of history, the taxonomic research community has developed a system for describing, classifying and naming taxa across multiple levels. For the marine biota, taxonomic information is organized and made publicly available through the World Register of Marine Species (WoRMS) that records more than 250,000 described valid species. Although scientists tend to assign an *equal* status (in terms of contribution to overall diversity) to each taxon used in taxonomy, biogeography, ecology and biodiversity, the question “*are all taxa equal?*” has never been tested at a global scale. We present evidence that this question can be addressed by applying relatedness indices (Taxonomic Distinctness) over the entire WoRMS metazoan tree. The RvLab, developed by the LifeWatchGreece RI, operating on a high-performance computer cluster, has been used to meet the high computational demands required for such an analysis at a global scale.