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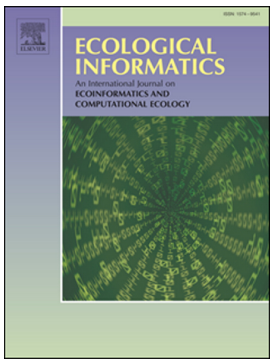

A thesaurus for phytoplankton trait-based approaches: Development and applicability

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ACCEPTED MANUSCRIPT

A thesaurus for phytoplankton trait-based approaches: development and applicability

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Abstract

In the last few decades, functional trait-based approaches have undergone an extraordinary expansion in phytoplankton ecology, due to the relative simplicity and the well-defined traits that determine the ecological niche of these organisms. A large quantity of heterogeneous and distributed data has been produced on phytoplankton traits and their use could be made more effective and efficient if data harmonization and interoperability would be improved.

The use of controlled vocabularies and thesauri is an acknowledged good practice to establish the foundation for semantic interoperability, a critical requirement for reuse and sharing of data. In fact, thesauri, collectively constructed, bypass ambiguity issues in natural language, facilitating the identification and integration of the information available in multiple data sources and allowing both scientists and computer applications to interpret more effectively the meaning of data.

Here we present a semantic resource on phytoplankton functional traits: the PhytoTraits thesaurus (http://thesauri.lifewatchitaly.eu/PhytoTraits/index.php). PhytoTraits is the result of the interdisciplinary collaboration of experts both from the phytoplankton functional domain and from information and communication technologies, working together within LifeWatch Italy, the Italian

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