

Development and use of HELCOM COMBINE phytoplankton dataset in SeaDataNet compliant format for the Baltic Sea

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Marine environmental management as well as scientific demands of the development in marine ecology needs a biological data system to store, archive, integrate and update marine biological, especially taxonomical information. A biological database should provide detailed information on procedures on sampling, preservation, analysing, taxonomical identification, and biovolume determination, in order to be able to select comparable results. For taxonomical identification, an authoritative and comprehensive general list of valid and synonymized names of marine organisms is required. For that purpose, the World Register of Marine Species (WoRMS) was developed as an offspring of European Register of Marine Species (ERMS) maintained at the Flanders Marine Institute (VLIZ). AphiaID, specific identification number for each marine taxon is the key parameter to identify taxa in the WoRMS.

In addition to a commonly acknowledged list of valid taxa names, common rules for determination of biovolumes are required. HELCOM Phytoplankton Expert Group (PEG) has compiled the list of taxa and biovolume (*Biovolume file*) for the Baltic Sea phytoplankton. In the HELCOM PEG *Biovolume file*, biovolumes are calculated using agreed geometrical shapes and various size classes for each species. The ongoing tasks of PEG group include updating the HELCOM COMBINE manual for Baltic Sea phytoplankton monitoring procedures, and updating the *Biovolume file* with the addition of AphiaID and AphiaID link according to WoRMS, addition of species synonyms, and addition of new species and size classes. Currently the PEG list includes 916 phytoplankton taxa with an individual AphiaID and AphiaID link, as well as information on trophy, geometric shape, size class, cell dimensions, biovolume calculation formula and carbon content of each taxon. The HELCOM COMBINE phytoplankton data forms an important biodiversity data set with continuous data flow from the Baltic Sea area and it is managed by HELCOM data host ICES.

Parallel tasks are included in other European projects as SeaDataNet, EMODnet Biology and JERICO-Next. The collaboration between projects is desired and the data standards are under development. ODV format is a candidate for a common data standard in marine biological taxonomy. Also common software would help the standardization on the reporting. Use of NEMO software provided by SeaDataNet project is demonstrated to manage marine phytoplankton observations to produce data output in ODV format coupling the need for HELCOM reporting.