

Interactive comment on “Global marine plankton functional type biomass distributions: coccolithophores” by C. J. O’Brien et al.

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As Chief Editors for ESSD, we have decided to accept this MAREDAT coccolithophore dataset and description (ESSD-2012-21) for publication in ESSD. We consulted with the guest editors for the MAREDAT Special Issue, looked carefully at MAREDAT products already published, and gave very close attention to the reviewer comments and the author reply.

The MAREDAT project set admirable goals for their overall product and for each of the sub-projects devoted to specific Plankton Functional Types (PFTs), goals dependent not only on their own standards and efforts but also on the cooperation of literally hundreds of oceanographers around the world. When those prospective partners neither

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responded nor contributed, as in this coccolithophore case, reviewers have noted the deficiencies but unfairly, in our view, criticized the product when in fact the authors have documented a vigorous solicitation effort. The MAREDAT effort reminds us that, too often, holders of original plankton data have not contributed those data to national, topical or regional databases, the very databases that form the essential core of integration efforts such as MAREDAT. We also note, after many many unfulfilled reviewer nominations for this particular paper, that a community that did not respond, for whatever reason(s), to repeated data requests very likely also would not respond to review requests. Nevertheless, one reviewer did submit substantial and thoughtful comments. The authors have, in our judgement, provided a clear and well-documented response.

The MAREDAT team adopted necessary and useful standards and procedures, including a common grid, a mutual requirement to convert abundance to biomass for all PFTs, a uniform statistical approach to high-value outliers, retention of original taxonomic information whenever possible, and a shared commitment to display and discuss seasonal, hemispheric and regional patterns for each PFT. Present and future users of this unique global atlas will thank the MAREDAT leaders for those commitments to uniformity. Within each PFT, however, those shared standards and procedures imposed an additional degree of complexity when, for example, conversion from abundance to biomass proved not straightforward for a specific functional type or the available observations proved too sparse, after all mutually agreed transformations and conversions, to support discussion of spatial or seasonal distributions. In several cases throughout the MAREDAT products, and again specifically for this coccolithophore case, reviewers noted this ‘ill fit’ of standards or procedures to the specific data types without recognizing the need and utility of those standards for the larger effort. Looking at the full set of MAREDATA data products, we can identify several cases where adherence to the tight standards adopted for the integrated product resulted in limited data coverage for a specific PFT. Any of the individual PFT groups might have adopted different and more satisfactory (from a reviewer point of view) processes and procedures, but only at the cost of incompatibility with other elements of the global atlas.

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We believe that the composite MAREDAT atlas represents an unprecedented accomplishment, produced in a timely manner to meet urgent needs in biodiversity monitoring and global modelling. Along with the authors, we recognize the dual outcomes of the project and the products: far from complete but an intensely valuable first insight. We see no other data centres or data services making, or prepared to make, an equivalent effort to produce a coherent global plankton compilation. We see need and justification for including this coccolithophore data - despite acknowledged deficiencies - and its associated description as a valued and published component of the MAREDAT Special Issue in ESSD.

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Interactive comment on Earth Syst. Sci. Data Discuss., 5, 491, 2012.