

## REFERENCE LIBRARY OF DNA-BARCODED DIATOMS – A USE CASE FOR PUBLISHING DATA VIA THE GBIF DATABASE ALGATERRA

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The Global Biodiversity Information Facility (<http://data.gbif.org>) is a global network of 57 countries and 47 organizations providing standardised observation and specimen data via the Internet to give open access to our knowledge of biodiversity. Thus GBIF fits to the needs of taxonomy and monitoring. Currently more than 367 million records provided by 406 data publishers are available via the data portals of GBIF (<http://data.gbif.org/occurrences>) and BioCASE ([www.biocase.org](http://www.biocase.org)).

GBIF-D *Plants, Algae and Protists* ([www.gbif.de](http://www.gbif.de)), funded by the Federal Ministry of Education and Research (BMBF, grant 01 LI 1001 A-F), is engaged in extending the quantity of data and datasets of German providers and in solving data quality issues. Aim of this initiative is to raise the usability of those data for taxonomy.

The database *AlgaTerra* ([www.algaterra.org](http://www.algaterra.org)) is providing research data on diatoms to GBIF for more than five years. The *AlgaTerra* Information System for micro algal biodiversity comprises type information, specimen data as well as images, videos, and molecular data for terrestrial and limnic micro algae. One focal area of *AlgaTerra* is the publication of images from diatom field observations as well as specimen and type data of African, American, and European diatoms. In 2012 *AlgaTerra* is subject to changes in its data architecture and lay out. *AlgaTerra* moves from a Berlin Model database to the Common Data Model (CDM) and will migrate to the EDIT Platform for Cybertaxonomy. This will result in a better integration of multimedia items and related observation and specimen data.

As a repository of primary biodiversity data *AlgaTerra* publishes voucher images of research projects, such as of diatom DNA barcoding. Advantages of publishing these images on the Internet are: (i) accessibility of these data independently from the publication, (ii) publication of several images is not limited by available space in a printed journal, (iii) flexibility because additional images can be added after publication, (iv) images can be analysed easily in other contexts. Our aim is to link valve morphology to molecular data of specific strains/taxa. These *AlgaTerra* records are cross-referenced with research papers (e.g. Zimmermann et al. 2011, Barcoding diatoms: evaluation of the V4 subregion on the 18S rRNA gene, including new primers and protocols. – *Organisms Diversity & Evolution* 11: 173-192, and [http://www.gbif.de/botany/barcoding\\_3](http://www.gbif.de/botany/barcoding_3)).