

User instructions, OA-ICC bibliographic database

Background

The OA-ICC bibliographic database is based on an initiative developed by Jean-Pierre Gattuso (CNRS/UPMC) in 1995. The database continued to evolve and was maintained as part of the EU project EPOCA (www.epoca-project.eu) from 2008 to 2012 (Gattuso & Hansson, 2011). In July 2012, the maintenance and update of the database became one of the activities of the IAEA Ocean Acidification International Coordination Centre ([OA-ICC](#)).

Database

The database includes journal articles, MSc and PhD dissertations, books, and book chapters, from 1922 to present. In March 2014, the database held more than 2000 references. The online version of the base includes citations, DOI's, abstracts and keywords allocated by the OA-ICC (see list below). Please note that the keywords identified by journals are not included, the 'Author keywords' in Mendeley are in fact the keywords specified by the OA-ICC.

An update to the database is provided to users every three months.

How to use it

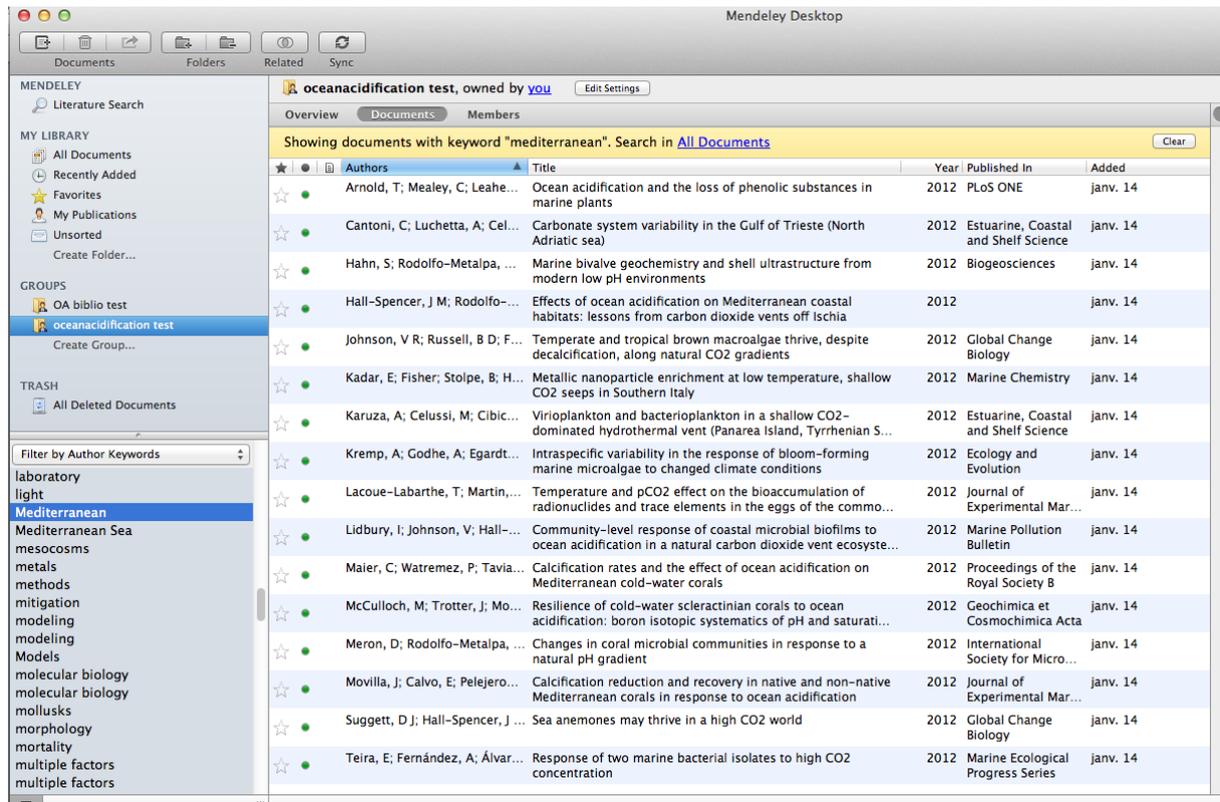
A direct link to the database is available [here](#) or users can simply go to the [Mendeley homepage](#), click on the Groups tab, and search for the group "Ocean acidification (OA-ICC)". Users can work with the bibliographic database online. There are also interfaces for iPhone and iPad users and soon for Android. However, it is more convenient to download the Mendeley's Desktop application, sync the group above to your library, and work from there. It also offers more powerful search tools (see below) and it is able to link references to local PDF files. The Desktop application is easy to download on Mac, PC, and Linux machines.

IMPORTANT: Please do not modify references and sync with the online public version of this database! The same copy of the base is uploaded weekly in order to avoid conflicts and erase potentially erroneous modifications by the followers. If you wish to modify references, please copy the references in this group (Ocean acidification (OA-ICC)) into a new folder in your private "My Library".

How to search the database (in Mendeley Desktop)

1) Using filters

In Mendeley Desktop, it is easy to filter papers by Author, Author Keywords, My Tags or Publications. For example, the screen capture below shows a filter by the "Author keyword" *Mediterranean*.



2) Using the Search window (the information below is provided by Mendeley; (<http://support.mendeley.com/customer/portal/articles/227955-what-advanced-search-features-are-there-in-mendeley-desktop->))

Advanced Search Operators

Search for...

citation analysis
 citation AND analysis
 ponies OR "small horses"
 ponies AND -"small horses"
 "real time quantitative PCR"
 title:"real time quantitative PCR"
 author:Albert
 author:"Albert Einstein"
 author:Campbell AND author:Ellis
 author:Campbell AND -author:Ellis
 published_in:"PLoS Medicine"
 intracellular AND year:2008

...to find articles that have

the words **citation** or **analysis**
 both the words **citation** and **analysis**
 the word **ponies** OR the exact phrase **small horses**
 the word **ponies** but NOT the phrase **small horses**
 the exact phrase **real time quantitative PCR**
 the exact phrase **real time quantitative PCR** in the **title** field
 the name **Albert** in their list of authors
 the exact name **Albert Einstein** in their list of authors
 both the names **Campbell** and **Ellis** in their list of authors
 the name **Campbell** but NOT **Ellis** in their list of authors
 the exact phrase **PLoS Medicine** in their journal or publication name
 the word **intracellular** and were published in the year **2008**

My Library Search

Only available when searching your local library, or groups.

Search for...

tag:"To read"
 note:"study material"

...to find articles that have

the tag or keyword **To read**
 contains the exact phrase **study material** in the **notes** field.

Examples:

Search: calcification

This will give you papers mentioning the word calcification anywhere (title, abstract, keywords)

Search: "year: 2012"

This will give you all papers, dissertations, books and book chapters published in 2012.

3) Search using the OA-ICC keywords

You will need to use the filter function mentioned above. The list of keywords, with explanations, is available below.

Example:

- Search: "year: 2012". This will give you 389 papers out of 2151 (all papers, dissertations, books and book chapters published in 2012).
- Add the filter "biological response". This will narrow the search down to 250 papers (papers published in 2012 studying a biological response to OA).
- Add the filter "algae". This will give you 34 papers (papers published in 2012 studying algae).
- Add the additional filter "laboratory". This will give you 20 papers (laboratory studies investigating a biological response of algae in 2012).

To view the number of results, select the articles found by the search. It will give you the total number of papers that match your search (displayed at the bottom of the list).

The screenshot shows the Mendeley Desktop interface. The main window displays search results for the query "year: 2012" in the "oceanacidification test" collection, filtered by keywords "calcification" and "algae". The search results list several articles, including:

- Competition between calcifying and noncalcifying temperate marine macroalgae under elevated CO2 levels (L C Hofmann, S Straub, K Bischof - 2012 - Marine Ecology Progress Series)
- Responses of marine primary producers to interactions between ocean acidification, solar radiation, and warming (K Gao, EW Helbling, DP Häder, DA Hut... - 2012 - Marine Ecology Progress Series)
- Carbonate production by calcareous red algae and global change (D Basso - 2012 - Geodiversitas)
- Ocean acidification and warming decrease calcification in the crustose coralline alga *Hydrolython onkodes* and increase susceptibility to grazing (M D Johnson, RC Carpenter - 2012 - Journal of Experimental Marine Biology and Ecology)
- Interactions between ocean acidification and warming on the mortality and dissolution of coralline algae (G Diaz-Pulido, KRN Anthony, DI Kline;... - 2012 - Journal of Phycology)
- Measurement of benthic photosynthesis and calcification in flowing-through seawater with stable carbonate chemistry (K Gao, J Xu, Y Zheng, C Ke - 2012 - Limnology and Oceanography Methods)
- Microenvironmental changes support evidence of photosynthesis and calcification inhibition in *Halimeda* under ocean acidification and warming (S Sinutok, R Hill, MA Doblin; M Kühn;... - 2012 - Coral Reefs)

The left sidebar shows the "Filter by Author Keywords" list, with "algae" selected. The status bar at the bottom indicates "7 of 388 documents selected".

Comments, problems, missing references?

We are grateful for suggestions for improvement. Please send your feedback to Lina Hansson (l.hansson@iaea.org).

How to cite the bibliographic database

To cite this database, please use similar wording to the example below:

“For this study we relied on the bibliographic database from the IAEA Ocean Acidification International Coordination Centre (OA-ICC) updated from (Gattuso and Hansson, 2011).”

On the OA-ICC

As research activities on ocean acidification and related stressors continue to develop, there is a growing need for international collaboration and coordination. Following a call by leading scientists for an international effort to coordinate, promote and facilitate science and related activities concerning ocean acidification, the Ocean Acidification International Coordination Centre (OA-ICC) was established by the IAEA, with direct and in-kind contributions from several of its Member States and key international projects. The OA-ICC promotes overarching international activities to serve not only the scientific community but also science users, including policy makers, media, and the general public. Among its activities, the OA-ICC is helping to establish an international observing OA network, promoting joint use of research platforms and experiments, stimulating collaboration between natural and social sciences, facilitating updates to recommendations for best practices, building science capacity especially in developing countries, and communicating science to non-scientists. Its related science products include

(1) the *OA-ICC news stream* (news-oceanacidification-icc.org) that informs scientists of recent publications, media coverage, meeting announcements, and jobs;

(2) the *OA-ICC data compilation on the biological response to ocean acidification* that provides easy access to regularly updated experimental data (<http://tinyurl.com/oaicc-data>) and

(3) the *OA-ICC bibliographic database* with currently more than 2000 references that include citations, abstracts and keywords to simplify searches and bibliographic statistical analysis.

For more information about the OA-ICC and its activities, please refer to the OA-ICC web site (www.iaea.org/ocean-acidification).

Reference:

Gattuso J.-P. & Hansson L., 2011. Ocean acidification: background and history. In: Gattuso J.-P. & Hansson L. (Eds.), *Ocean acidification*, pp. 1–20. Oxford: Oxford University Press.

OA-ICC keywords (11 March 2014)

NOTE: Only keywords in **bold** should be used when retrieving statistical information from the base.

MAIN CATEGORIES

Chemistry

- data collection (time series, cruises etc.)
- chemical equations (saturation states, pH etc.)
- speciation of elements/metals
- sound absorption (borate speciation)

Biogeochemistry

- export, fluxes, biogeochemical cycles, vertical transport etc.
- elemental ratios (C:N, C:P, N:P)
- POC, PIC, TEP, DOC...
- DMS, climate relevant gases
- Feedbacks to the atmosphere

Paleo

- Only when there is paleo data (not when only briefly discussing a paleo implication of a method e.g.)

Modeling

- **Individual modeling** (one organism)
- **Community modeling** (e.g. mesocosm experiments)
- **Regional modeling** (one region of the ocean)
- **Global modeling**

Biological response

- **Phytoplankton**
- **Zooplankton**
- **Cnidaria** (except corals)
- **Corals** (including coral reefs)
- **Fish**
- **Protists** (including foraminifera and zooxanthellae (free-living and symbionts))
- **Algae**
- **Prokaryotes**
- **Mollusks**
- **Echinoderms**
- **Crustaceans**
- **Nematodes**
- **Phanerogams**
- **Annelids**
- **Nemertea**
- **Sipuncula**
- **Bryozoa**
- **BRcommunity** (the response of a mix of organisms, mesocosm experiments e.g.)
- **Brachiopods**
- **Porifera**
- **Birds**
- **Fungi**

- **Kinorhyncha**
- **Virus**
- **Xenacoelomorpha**
- **Archaea**
- **Chordata**
- **Sediment**

Review (scientific and “substantial”)

Mitigation

Policy

Socio-economy

Fisheries

Methods (technical, method descriptions)

Education

Optical (Balch and Utgoff 2009)

PROCESSES AND PARAMETERS

Calcification

Rate: (dry mass (CaCO₃ or C)/time unit) [mmol/m²/h, g/m²/h...]
⊗PIC, PIC production (PIC/time unit)
Percent weight increase/month (skeletal weight)
Alkalinity anomaly (A_T down), buoyant weight etc.
Mechanism: incorporation of ions etc.
Mass

Primary production

Rate: (O₂/time unit, CO₂/time unit, C/time unit), carbon fixation, ¹⁴C uptake, ⊗POC, POC production (POC/time unit)

Photosynthesis (check also keyword "primary production")

Underlying biological mechanisms: CA activities, CCM, Fv/Fm...

Growth

Pelagic: Cell division rate (μ)
Growth rate (e.g. g/m³/d)
Linear extension (e.g. cm/yr) (benthic). For example length or weight increase per time unit of the *same organism*. Growth of one organism (different from comparing 2 organisms' sizes at the end of the experiment). See Parker et al 2010 for a clear example.

Reproduction

Hatching
Embryonic development
Fertilization
Recruitment/settlement

Performance

Swimming, motility, locomotory scope
Behaviour
Avoidance behaviour
Feeding behaviour/rates/activity
Risk behaviour
Escape behaviour
Stress response/resistance

Dissolution (including bioerosion)

Physiology (including metabolism)

Acid-base balance, intracellular pH etc.
Immune response, immune suppression
Aerobic scope/performance
Metabolic rate
Gill oxygen consumption, gill energy budgets
Thermal tolerance
Heart rate/activity
Ion regulation
Protein and RNA synthesis
Thermal tolerance
Enzyme activities

Apoptosis
Lipid class composition
Fatty acid composition

Nitrogen fixation

Nitrogen fixation only. Nitrification etc. goes under “otherprocess”.

Respiration

Mortality

Morphology

Morphology, morphometry

(shape, shell or body (org.) weight or length at a given moment/stage (no rate), i.e. comparison of SIZE of *different organisms* subjected to different conditions, at a given moment). See Parker et al. 2010 for a clear example.

Skeletogenesis/shell formation but no rate (e.g. number of spines...). Morphological differences (e.g. scanning electron photographs), abnormalities... Observations of coccolith weights (e.g. Beaufort papers). For example field studies (Marshall et al 2008).

Adaptation (formerly under **Otherprocess**) – entry as keyword on 26 November 2010

Adaptation/acclimation (including evolutionary).

The keyword “otherprocess” is kept for these papers. If statistical analysis is done with papers added prior to this date, this keyword cannot be used, “otherprocess” must be used instead.

Community composition (formerly under **Otherprocess**) – entry as keyword on 14 August 2009

Relative abundance of plankton/diversity/biodiversity/competition/community composition.

The keyword “otherprocess” is kept for these papers. If statistical analysis is done with papers added prior to this date, this keyword cannot be used, “otherprocess” must be used instead.

Abundance (formerly under **Otherprocess**) – entry as keyword on 12 May 2012

The keyword “otherprocess” is kept for these papers. If statistical analysis is done with papers added prior to this date, this keyword cannot be used, “otherprocess” must be used instead.

Otherprocess, any process which is not covered by the keywords above, e.g.:

- Metamorphosis
- Photoprotection
- Algal infection rate (establishment of symbiosis)
- Kelp phlorotannin (phenolic) production in blade tissues
- Histopathology of gill and kidney tissue (Harris 1999)
- Abundance (not growth)
- Olfaction
- Grazing
- Protein production (Grosset 2006)
- Release of nutrients (Bulling)
- Nutrient uptake, availability (Rivers 1995, Xu 2010)
- Iron uptake (cellular trace metal conc.)
- Magnesium content
- Bleaching
- Toxicity
- Pigmentation

Nitrification, denitrification
Bioaccumulation of metals
Zooxanthellae density
Domoic acid production
CDOM abundance
Virulence
Burrowing activity
Statolith formation (non calcification)
Non photochemical quenching
Etc...

Methods used

1. Laboratory

Mesocosms (field mesocosms and lab when the word mesocosm is explicitly used in the paper)

Molecular biology (ONLY gene expression, genetic diversity, DNA, RNA... (not proteins etc.) and ONLY for experimental studies)

2. Field (cruises etc, observation, on-site experiments, shipboard experiments)

Mesocosms (field mesocosms and lab when the word mesocosm is explicitly used in the paper)

Molecular biology (ONLY gene expression, genetic diversity, DNA, RNA... (not proteins etc.) and ONLY for experimental studies)

3. Multiple factors + the other factors considered (ONLY for “Biological response” papers)

- **temperature**

- **light**

- **salinity**

- **nutrients**

- **oxygen**

- **toxicants**

- **fishing pressure**

- **pathogens**

- **metals**

- **bioturbation**

- **communityMF** (community composition; the “communityMF” keyword reflects that this is a sub-keyword of the “Multiple factors” category, since community composition already exists as a keyword of its own).

Geography

This is only used when a geographical region is clearly indicated. It is not used when the sampling/collection of organisms have been carried out remotely from the laboratory. It is not used for organisms that have been cultured for a long time in the laboratory, or for experiments using organisms from commercial hatcheries.

1. **North Atlantic**

2. **South Atlantic**

3. **North Pacific**

4. **South Pacific**

5. **Arctic**

6. **Antarctic**

7. **Indian**

8. Mediterranean

9. Baltic

10. Red Sea

11. Black Sea

Miscellaneous

Papers that only briefly mentions ocean acidification are NOT ADDED to the Biblio base

Papers that discuss ocean acidification briefly, are given the keywords "ocean acidification" and "NOTSTAT"

Reports and non peer-reviewed documents are given the keyword "NOTSTAT"

Submitted articles are not included.

Discussion papers (BGD etc.) are given the keyword "NOTSTAT DISC".

Address: EU reflects Europe, not the European Union

The type "Conference Proceedings" are ONLY used for oral and poster presentations, and shorter meeting reports and are not taken into consideration for statistical analysis. Important conference proceedings (that should be included in the statistical analysis) are placed in "Books" or "Book chapters" or "Journal".

The type "Report" are only used for reports which should not be taken into account in the statistical analysis.

EPOCA keywords

epoca paper

epoca oral

epoca poster

epoca thesis

epoca (newsletters, FAQ etc., products which are not peer-reviewed papers)

oa-icc