

User instructions for the 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 *European Project on Ocean Acidification* (EPOCA) 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 is freely available on [Mendeley](#) and [Zotero](#), and includes journal articles, MSc and PhD dissertations, books, and book chapters, from 1922 to present. In May 2019, the database held more than 5,500 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, and the 'Tags' in Zotero are in fact the keywords specified by the OA-ICC.

An update to the database is provided to users every month.

How to access the database from Mendeley

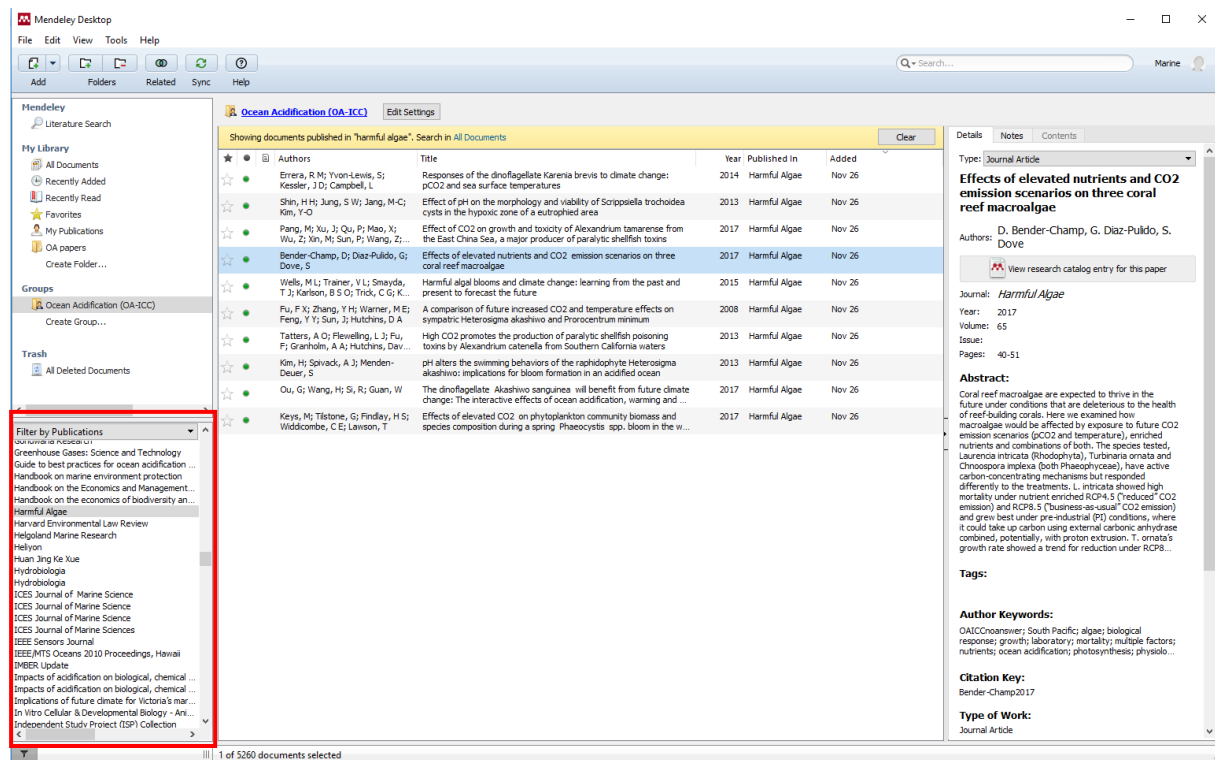
1. Go to the [Mendeley homepage](#) and create a free account
2. Click on the Groups tab, and search for the group "Ocean Acidification (OA-ICC)"
3. Users can work with the bibliographic database online, but some features will not be available (such as using the keywords allocated by the OA-ICC). Instead, it is recommended to download the Mendeley desktop application available for Mac, Windows and Linux

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 drag and drop 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, when selecting the journal “Harmful Algae” using the Publications filters, only references from this journal are found.



2) Using the Search window

The Search window is on the top-right of the Mendeley desktop application. Here are several advanced search options:

Advanced Search Operators in Mendeley

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**

Example:

- Search: “calcification”. This will give users references mentioning the word calcification **anywhere (title, abstract, keywords)**.
- Search: “year: 2012”. This will give users all references published in 2012.
- Search “calcification AND year: 2012”. This will give users all references from the year 2012 mentioning the word ‘calcification’

3) Search using the OA-ICC keywords (Author Keywords)

Note that the “Author Keywords” are not added by the authors, but instead are allocated by the OA-ICC. The list of OA-ICC keywords, with explanations, is available below.

Example:

- Search: “year: 2012”
- Add the filter “biological response”. This will narrow the search down to papers in 2012 which have examined biological response to OA
- Add the filter “calcification” (use the CTRL button to choose multiple filters). This will give you biological response papers from 2012 looking at calcification, according to the logic used by the OA-ICC for keyword allocation (see below).

Please note that search methods #2 and #3 will yield different results because #2 searches terms mentioned in the title, abstract, or keywords, whereas #3 will yield results within an Author Keyword filter, which has been allocated by the OA-ICC.

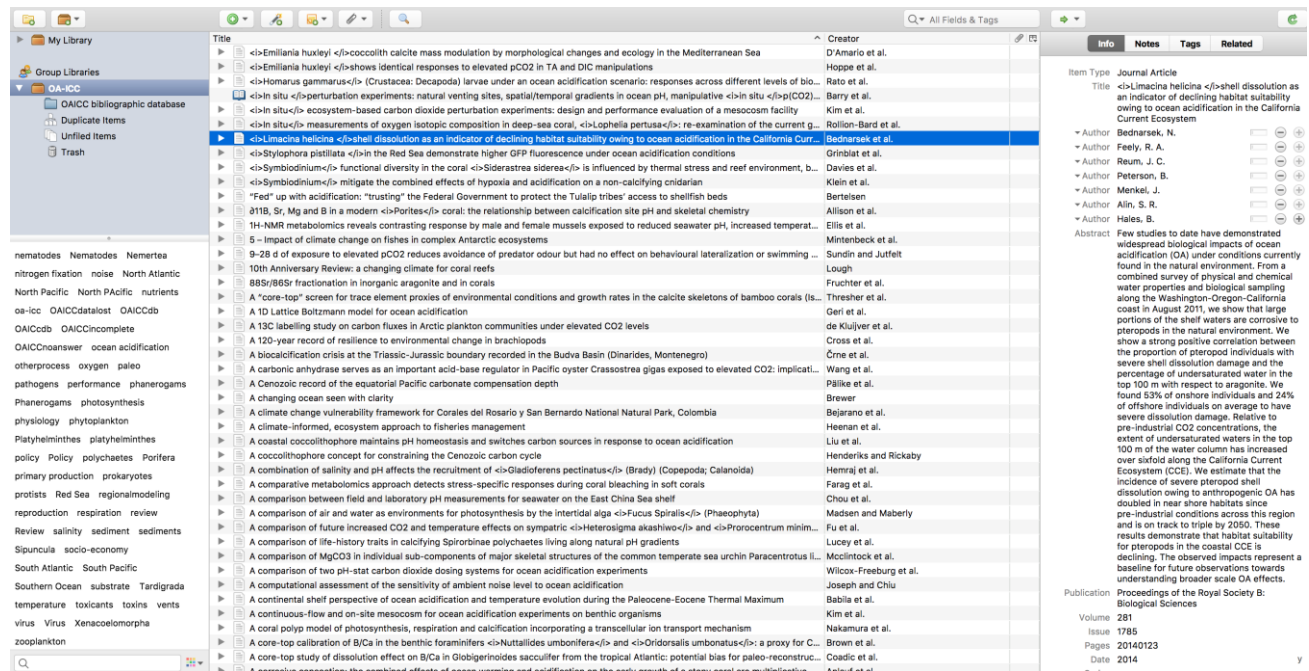
For example, a search for “calcification” using search method #2 will include papers where the term “calcification” is mentioned, but the calcification rate is not measured (1156 references found in Nov 2018). Search method #3 will only include papers where calcification rates are measured (740 references found in Nov 2018).

In order to see the total number of papers found within a search, use “CTRL-A” to select all references, and the number of references will be displayed at the bottom of the screen.

The screenshot shows the Mendeley Desktop application window. The top menu bar includes File, Edit, View, Tools, and Help. Below the menu is a toolbar with icons for adding, deleting, and syncing documents. The main window is divided into several panes. On the left, there is a 'Mendeley Library' pane with options like 'All Documents', 'Recently Added', 'Recently Read', 'My Publications', 'OA papers', and 'Create Folder...'. Below this is a 'Groups' pane with 'Ocean Acidification (OA-ICC)' selected. At the bottom left, a 'Filter by Author Keywords' dropdown menu is open, showing a list of keywords including 'biological response' and 'calcification'. The central pane displays search results for the query 'year: 2012' in the 'Ocean Acidification (OA-ICC)' group. The results are listed in a table with columns for 'Results for "year: 2012" in "Ocean Acidification (OA-ICC)" in documents with keyword "calcification", "biological response", "Search in All Documents'. The results include titles, authors, and publication years. On the right, there is a 'Details' pane showing the selected document's metadata, including the title 'Patterns of Magnesium-Calcite distribution in the skeleton of some polar bryozoan species - Mineralogy of polar bryozoan skeletons', authors 'J. Loxton, P. Kuklinski, J. Mair et al.', and a list of keywords.

How to access the database from Zotero

1. Go to the [Zotero homepage](#) and create a free account
2. Click on the Groups tab, search for the group “OA-ICC”, and join this group
3. Users can work with the bibliographic database online, but some features will not be available. Instead, it is recommended to download the Zotero desktop application available for Mac, Windows and Linux



How to search the database (in Zotero Desktop)

Running a Quick Search

To begin searching, click inside the search box at the top-right of the center pane (or type Ctrl/Cmd-F) and start typing your search terms. As you type, only those items in the center column that match the search terms will remain.

Quick search can be used in three different modes:

“Title, Year, Creator” - matches against these three fields, as well as publication titles

“All Fields & Tags” - matches against all fields, as well as tags and text in notes

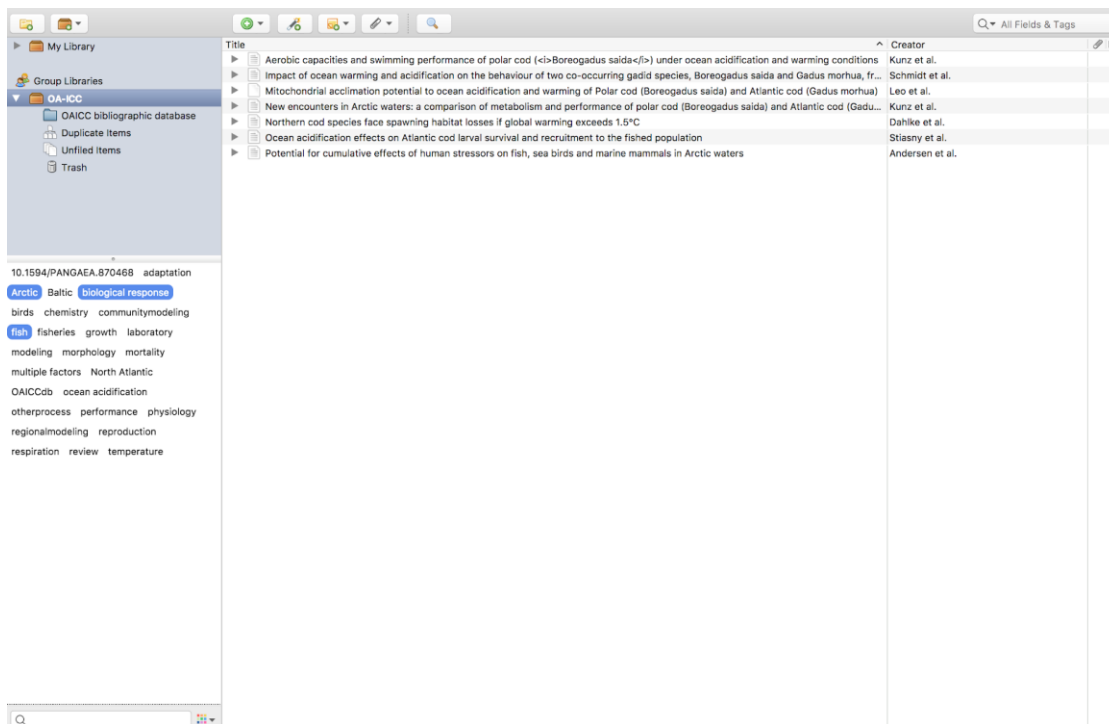
“Everything” - matches against all fields, tags, text in notes, and indexed text in PDFs (this requires that PDF indexing be enabled)

For running an advanced search in Zotero, see the [Zotero Searching page](#).

Search using the OA-ICC keywords (Tags)

Note that the ‘Tags’ are not added by the authors, but instead are allocated by the OA-ICC. The list of OA-ICC keywords, with explanations, is available below. Several tags can be selected at once for specific results.

Example: In the screenshot below, three tags are selected: Arctic, biological response, and fish, which yields seven references which include all three of these keywords. Tags can be unselected by simply re-clicking on them.



OA-ICC keywords *(last updated 15 July 2019)*

MAIN CATEGORIES

Chemistry

- data collection (time series, cruises etc.)
- methods discussions with chemical equations (saturation states, pH etc.)
- impact of OA on the speciation or dissolution 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

- **Algae**
- **Annelids**
- **Archaea**
- **Birds**
- **Brachiopods**
- **BRcommunity** (the response of a mix of organisms, mesocosm experiments e.g.)
- **Bryozoa**
- **Chordata**
- **Cnidaria** (except corals)
- **Corals** (including coral reefs)
- **Crustaceans**
- **Cryptophyta**
- **Echinoderms**
- **Fish**
- **Fungi**
- **Gastrotricha**
- **Kinorhyncha**
- **Mammals**
- **Mollusks**
- **Nematodes**
- **Nemertea**
- **Phanerogams**
- **Phytoplankton**
- **Platyhelminthes**
- **Porifera**
- **Prokaryotes (including cyanobacteria)**
- **Protists** (including foraminifera and zooxanthellae (free-living and symbionts))
- **Sediment**
- **Sipuncula**
- **Tardigrada**
- **Tracheophyta**
- **Virus**
- **Xenacoelomorpha**
- **Zooplankton**

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 (CaCO_3 or C)/time unit) [$\text{mmol/m}^2/\text{h}$, $\text{g/m}^2/\text{h}$...]

⊗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: (O_2 /time unit, CO_2 /time unit, C/time unit), carbon fixation, ^{14}C 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)

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

Non photochemical quenching

Etc...

METHODS

1. Laboratory

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

Molecular biology (gene expression, genetic diversity, DNA, RNA, proteomics 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 (gene expression, genetic diversity, DNA, RNA, proteomics etc. and ONLY for experimental studies)

Vents

3. Multiple factors + the other factors considered (ONLY for “Biological response” experimental 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).
- **flow**
- **Predation**
- **Noise**
- **substrate**

GEOGRAPHY

Collection site of the organism. This is only used when a geographical region is clearly indicated. It is not used for organisms that have been cultured for a long time in the laboratory.

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

Comments, problems, missing references?

We are grateful for suggestions for improvement. Please send your feedback to the OA-ICC Project Officer 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 5,500 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 (<https://www.iaea.org/services/oa-icc>).

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.