

# lit-tag-viewer User Guide

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## What is lit-tag-viewer?

The [lit-tag-viewer app](#) allows users to search, visualize, and summarize a tagged literature database created using the lit-tag-builder app (“lit-tag database”).

The [Search database](#) feature enables filtering based on paper criteria (*author, publication year, title*), notes criteria (*keywords in user notes*), and tag criteria (*user-defined categories*). Papers that meet the selected criteria are displayed in a table and can be exported to .csv or .bib files.

The [Summary plot](#) feature supports visualization of the full or filtered database. The app generates a bar graph displaying the number of papers (y-axis) for any paper or tag criteria (x-axis). Users also have the option to create a stacked bar graph with a color key to visualize two categorical variables.

The [Summary table](#) feature supports the creation and export of tables with user selected fields from the lit-tag database.

The [Reports](#) feature generates a downloadable file (.html, .pdf, .docx) that summarizes the full or filtered database. In addition to basic bibliographic information, reports can include the paper abstract, tags, and notes.

The [lit-tag-builder](#) app is a separate standalone application for creating a lit-tag database that can be viewed with the lit-tag-viewer.

Recommended citation for the lit-tag-builder and lit-tag-viewer apps: McElhany, P., Grabb, K. C., Wood, M. M., Howe, J. (2025). “Lit-tag-builder and Lit-tag-viewer: Apps for creating and viewing a database of annotated literature references”, NOAA Fisheries. [add URL]

## Using lit-tag-viewer

### Load database

Before using lit-tag-viewer, two files must be loaded: 1) a **lit-tag database .csv file** made using the lit-tag-input app and 2) a **lit-tag tag categories .xlsx file** that contains tag categories, tag names and tag value options.

## Creator-provided files

Users may interact with versions of lit-tag-viewer that the creator has pre-loaded with the database .csv file and categories .xlsx files. For example, a creator may publish a public version of lit-tag-viewer pre-loaded with files specific to a particular database project. In this case, simply click “Load Database”. A table with the authors, year and title of all the references in the database will appear on the right side of the window. You can download the pre-loaded database .csv and categories .xlsx file by clicking “Download database” and “Download tag categories”, respectively.

The screenshot shows the mcdrlit-tag-viewer application window. On the left, there is a sidebar with the following information:

- Database name: mcdrlit.tag\_db
- Database date: 2025\_06\_13\_1742\_UTC
- Categories name: categories\_9

Below this are three buttons: "Load database" (highlighted in blue), "Download database", and "Download tag categories".

The main area displays a table of references. The columns are "author", "publication.year", and "title". The data includes:

author	publication.year	title
Adkins, Jess F.; Naviaux, John D.; Subhas, Adam V.; Dong, Sijia; Berelson, William M.	2021	The Dissolution Rate of CaCO <sub>3</sub> in the Ocean
American Geophysical Union	2024	Ethical Framework Principles for Climate Intervention Research
Arrieta, Jesús M.; Weinbauer, Markus G.; Lute, Carolien; Herndl, Gerhard J.	2004	Response of bacterioplankton to iron fertilization in the Southern Ocean
Aspen Institute Staff and Energy and Environment Program	2016	A Code of Conduct for Marine Carbon Dioxide Removal
Assmy, Phillip; Henjes, Joachim; Klaas, Christine; Smetacek, Victor	2007	Mechanisms determining species dominance in a phytoplankton bloom induced by the iron fertilization experiment EisenEx in the Southern Ocean
Aumont, O.; Bopp, L.	2006	Globalizing results from ocean in situ iron fertilization studies
Bach, L.; Tasmitt, T.; Baldry, K.; McGee, J.; Laurenceau-Corneec, E.; Strzepek, R.; Xie, Y.; Boyd, P.	2023	Identifying the Most (Cost-)Efficient Regions for CO <sub>2</sub> Removal With Iron Fertilization in the Southern Ocean
Bach, Lennart T.; Boyd, Philip W.	2021	Seeking natural analogs to fast-forward the assessment of marine CO <sub>2</sub> removal
Bach, Lennart T.; Gill, Sophie J.; Rickaby, Rosalind E. M.; Gore, Sarah; Renforth, Phil	2019	CO <sub>2</sub> Removal With Enhanced Weathering and Ocean Alkalinity Enhancement: Potential Risks and Opportunities

At the bottom of the main area, a box contains the text: “Load Database” tab when the files are pre-loaded

## User-provided files

Alternatively, users may utilize lit-tag-viewer to view any database and category files they have saved locally on their computer. To load the database, click browse and select the appropriate .csv file on your local hard drive. To load the categories, click browse and select the appropriate .xlsx file on your local hard drive. Once both fields are marked “Upload complete” under the file name, click the “Load database” button. A table with the authors, year and title of all the references in the database will appear on the right side of the window.

lit-tag-viewer   [Load database](#)   [Search database](#)   [Summary plots](#)   [Reports](#)   [Help](#)

**Database File**

[Browse...](#) mcdr\_lit\_tag\_db\_2025\_06\_04\_195: [Upload complete](#)

**Categories File**

[Browse...](#) categories\_8 (1).xlsx [Upload complete](#)

[Load database](#)

[Download database](#)  [Download tag categories](#)

author	publication_year	title
Adkins, Jess F.; Naviaux, John D.; Subhas, Adam V.; Dong, Sijia; Berelson, William M.	2021	The Dissolution Rate of CaCO <sub>3</sub> in the Ocean
Ali, Asad; Shen, Pei Kang	2020	Nonprecious metal's graphene-supported electrocatalysts for hydrogen evolution reaction: Fundamentals to applications
Arrieta, Jesús M.; Weinbauer, Markus G.; Lute, Carolien; Herndl, Gerhard J.	2004	Response of bacterioplankton to iron fertilization in the Southern Ocean
Aspen Institute Staff and Energy and Environment Program	2016	A Code of Conduct for Marine Carbon Dioxide Removal
Assmy, Philipp; Henjes, Joachim; Klaas, Christine; Smetacek, Victor	2007	Mechanisms determining species dominance in a phytoplankton bloom induced by the iron fertilization experiment EisenEx in the Southern Ocean
Aumont, O.; Bopp, L.	2006	Globalizing results from ocean in situ iron fertilization studies
Bach, L.; Tasmitt, T.; Baldry, K.; McGee, J.; Laurenceau-Cornec, E.; Strzepek, R.; Xie, Y.; Boyd, P.	2023	Identifying the Most Cost-Efficient Regions for CO <sub>2</sub> Removal With Iron T., Tasmitt, V., Baldry, K., McGee, J., Laurenceau-Cornec, E. C., Strzepek, R. F.,
Bach, Lennart T.; Boyd, Philip W.	2021	Seeking natural analogs to fast-forward the assessment of marine CO <sub>2</sub> removal
Bach, Lennart T.; Gill, Sophie J.; Rickaby, Rosalind E. M.; Gore, Sarah; Renforth, Phil	2019	CO <sub>2</sub> Removal With Enhanced Weathering and Ocean Alkalinity Enhancement: Potential Risks and Co-benefits for Marine Pelagic

“Load database” tab with an example database loaded.

## Search database

The “Search database” tab can be used to filter the full database to identify a subset of references that meet user-selected criteria.

The left side of the window displays the “Paper table (filtered).” Before filtering criteria are supplied, the full database will be displayed. After filtering, the table will be updated to display only those papers that meet the filtering criteria. The center of the window displays the search criteria that may be applied by the user. The right of the window displays the selection criteria that have been applied, the number of papers meeting those criteria, and the export functionality for saving filtered databases.

To filter papers, enter search terms and/or select criteria checkboxes, then click the “Select papers” button. Clicking “Clear criteria” will reset search criteria.

Filtered databases may be downloaded as .csv or .bib files by clicking the appropriate “Export selection” button after entering a field name in the “Export filename” text field.

### Filter by “Paper criteria”

Users may search by author name or keywords in the title or abstract. Strings of keywords are allowed, and multiple search terms should be separated by a semi-colon. Search strings are case sensitive.

### Filter by “Notes criteria”

Users may search by keywords in notes provided by the database reviewer. Strings of keywords are allowed, and multiple search terms should be separated by a semi-colon. Search strings are case sensitive.

### Filter by “Tag criteria”

Users may filter by one or more tag categories by selecting checkboxes associated with tag values. The tag categories and values are those supplied in the **lit-tag tag categories .xlsx file**.

### Advanced custom search

More complicated searches of the database can be done by entering an advanced custom search. The syntax for the search is that used in the R tidyverse “filter” function. All the base R and tidyverse functions are available for search. Searches may often want to use the “str\_detect” function.

### View tags on individual papers

In the search tab, selecting a paper from the table of filtered papers in the left panel will bring up a window with the tags, notes and abstract specific to that paper. To close the tab, click “Dismiss” at the bottom.

**lit-tag-viewer** Load database Search database Summary plots Summary table Reports Help

**Paper table (filtered)**

author	publication_year	title
Bach, Lennart T.; Ho, David T.; Boyd, Philip W.; Tyka, Michael D.	2023	Toward a consensus framework to evaluate air-sea CO <sub>2</sub> equilibration for marine CO <sub>2</sub> removal
Bach, Lennart T.; Vaughan, Naomi E.; Law, Cliff S.; Williamson, Phillip	2024	Implementation of marine CO <sub>2</sub> removal for climate mitigation: The challenges of additionality, predictability, and governability
Bertram, Christine; Merk, Christine	2020	Public Perceptions of Ocean-Based Carbon Dioxide Removal: The Nature-Engineering Divide?
Boettcher, Miranda; Brent, Kerry; Buck, Holly; Jean, Low; Sean; McLaren, Duncan; Mengis, Nadine	2021	Navigating Potential Hype and Opportunity in Governing Marine Carbon Removal
Boettcher, Miranda; Choi, Fei; Conathan, Michael; Cooley, Sarah; Keller, David; Klinsky, Sonja; Lezaun, Javier; Renforth, Phil; Scobie, Michelle; Webb, Romany M	2023	A Code of Conduct for Marine Carbon Dioxide Removal Research
Boyd, P W; Gattuso, J-P; Hurd, C L; Williamson, P	2024	Limited understanding of basic ocean processes is hindering progress in marine carbon dioxide removal
Boyd, Philip; Gattuso, Jean-Pierre; Dai, Minhan; Legendre, Louis; Satterfield, Terre; Webb, Romany	2025	The Need to Explore the Potential of Marine CDR with a One-Earth Strategy: A Guide for Policy-makers
Caserini, Stefano; Pagano, Dario; Campo, Francesco; Abbà, Antonello; De Marco, Serena; Righi, Davide; Renforth, Phil; Grossi, Mario	2021	Potential of Maritime Transport for Ocean Liming and Atmospheric CO <sub>2</sub> Removal
Cooley, Sarah R	2023	The Ocean Carbon Dioxide Removal Decision-

**Search criteria**

Exclude obsolete papers

Select missing values

Select

**Paper criteria**

Years  
2020 - 2025

Notes criteria

summary\_notes

**Tag criteria**

general location species treatment

general

mCDR focus

does\_not\_mention\_mcdr

general\_cdr

general\_mcdr

specific\_mcdr

mCDR method

artificial\_downwelling

artificial\_upwelling

direct\_ocean\_capture

macro\_algae

ocean\_alkalinity\_enhancement

ocean\_fertilization

not\_applicable

Paper type

comment

original\_research

Advanced custom search (R filter condition syntax)

**Paper selection summary**

**Selection criteria**

field	value
years	2020 - 2025
m_cdr_focus	general_mcdr

**Selection summary**

Number of papers in db: 339

Number of papers selected: 29

## Example of “Search database” tab

**mcdrlit-tag-viewer** Load database Search database Summary plots Reports Help

**Paper table (filtered)**

author	publication_year	title
Adkins, Jess F.; Naviaux, John D.; Subhas, Adam V.; Dong, Sijia; Berelson, William M.	2021	The Dissolution Rate of CaCO <sub>3</sub> in the Ocean
American Geophysical Union	2024	Ethical Framework Principles for Climate Intervention Research
Arrieta, Jesus M.; Weinbauer, Markus G.; Lute, Carolin; Herndl, Gerhard J.	2004	Response of bacterioplankton to fertilization in the Southern Ocean
Aspen Institute Staff and Energy and Environment Program	2016	A Code of Conduct for Marine Carbon Dioxide Removal
Assmy, Philipp; Herweg, Joachim; Klaas, Christine; Smetacek, Victor	2007	Mechanisms determining species dominance in a phytoplankton bloom induced by the iron fertilization experiment EsiweEx in the South Atlantic
Aumont, O.; Biopp, L.	2006	Globalizing results from in situ iron fertilization studies
Rach, I.; Tavoni, T.	2023	Identifying the Most

**Search criteria**

Year: 2021

Author(s): Adkins, Jess F.; Naviaux, John D.; Subhas, Adam V.; Dong, Sijia; Berelson, William M.

**general**

`m_cdr_focus: does_not_mention_mcdr`

`m_cdr_method: not_applicable`

`paper_type: review`

`paper_topic: dissolution`

`type_of_method_used: not_applicable`

`adjacent_topic_to_m_cdr: other`

`adjacent_topic_to_fisheries: not_applicable`

**location**

`ocean_basin: global`

`geopolitical_area: not_applicable`

`habitat_type: not_applicable`

`depth: not_applicable`

`experiment_location: not_applicable`

**species**

`species_common_name: NA`

`species_scientific_name: NA`

`taxon: not_applicable`

`life_stage: not_applicable`

**Paper selection summary**

**Selection criteria**

Number of papers in db: 339

Export filename

## View of “tags on individual papers”

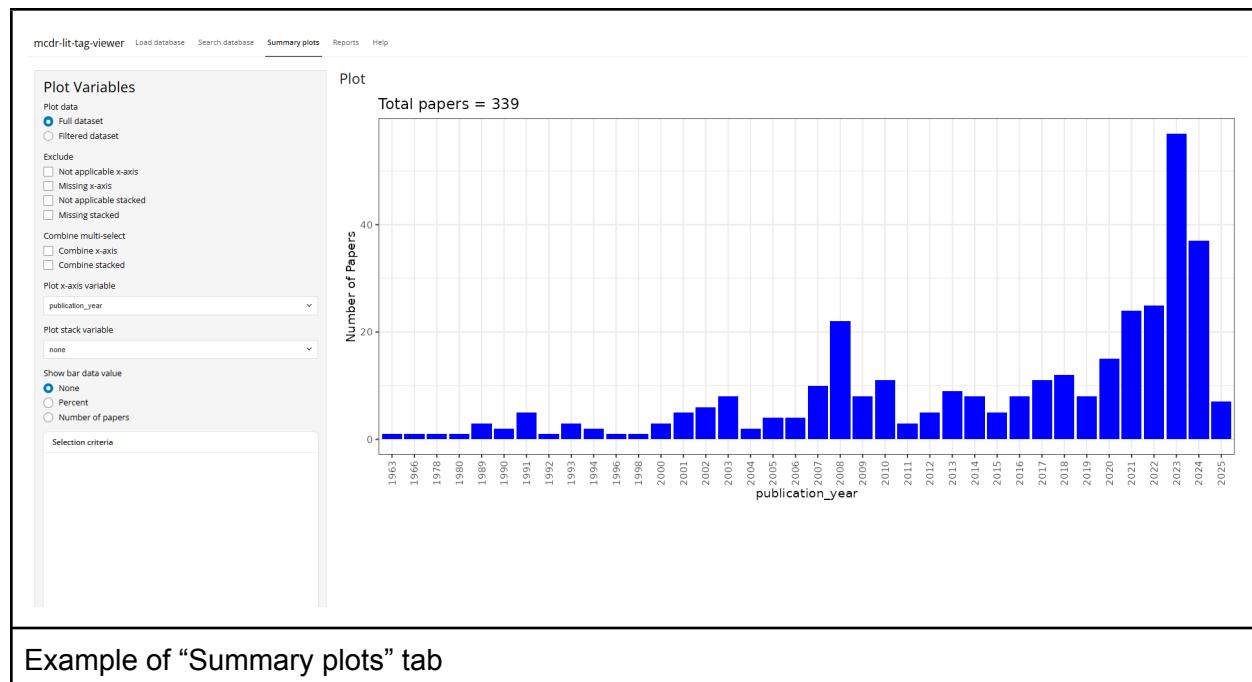
5

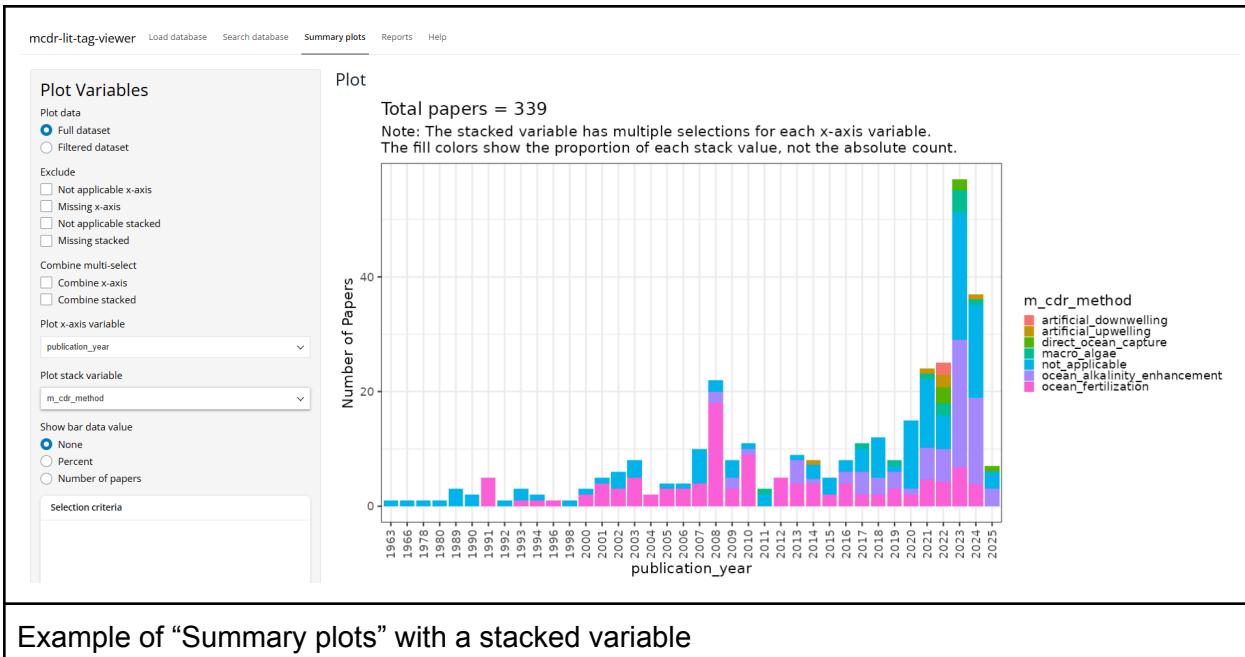
## Summary plots

The “Summary plots” generates bar graphs and stacked bar graphs for bibliographic information and tag categories. The user may select “Full dataset” to plot data for the entire database, or may select “Filtered database” to plot only the filtered database currently selected in the “Search database” tab.

Plots are generated by selecting an x-axis variable in the “Plot x-axis variable” dropdown menu. A stack variable may also be selected under “Plot stack variable” to visualize two categorical variables together. Percentage or number of papers represented by each bar may be added by making the appropriate selection under “Show bar data value.” Users may optionally exclude “not applicable” or missing values from the plot.

When plotting stacked variables, users may also opt to “Combine multi-select” for the x-axis and/or stack variable. This option can be applied when, for example, the stacked variable has multiple selections for each x-axis variable. The default plot will show the proportion of each stack value, not the absolute count. Applying “Combine stacked” will instead show the absolute count and separate stack variables for each combination of multiple selections.





Example of “Summary plots” with a stacked variable

## Summary table

A summary table can be created with user selected fields showing either the complete data set or the filtered data set. The column order can be changed by clicking and dragging the column header. The table can be sorted by clicking on the header of the column to be used for sorting. The summary table can be downloaded as a .csv file.

Example summary table.

## Reports

The Reports tab allows users to generate and output summary reports for the full database or the filtered database currently selected in the “Search database” tab.

Users may enter a report title and author, and opt to sort the report by author, publication year, or title. The default settings produce a report that includes basic bibliographic information, paper\_url, abstract, tags, missing\_tags, not\_applicable\_tags, notes, and pagebreaks. Users may customize the report contents by selecting only desired elements.

Click the “Show report” button to view the report on the right side of the window.

To save the report to your computer as an .html, .pdf, or .docs file, edit “Report filename” and select your preferred file format. Click the “Download report” button.

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Report title:  
Demo Report

Report author:

Report data  
 Full dataset  
 Filtered dataset

Report sort order  
 author

Include in report  
 paper\_url  
 abstract  
 tags  
 missing\_tags  
 not\_applicable\_tags  
 notes  
 pagebreaks

Show report

Report filename:  
untitled

Report download file type  
 html  
 pdf  
 docx

[Download report](#)

## Demo Report

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### Response of bacterioplankton to iron fertilization in the Southern Ocean

2004

Arrieta, Jesús M.; Weinbauer, Markus G.; Lute, Carolien; Hemdi, Gerhard J.

[Paper URL](#)

**Abstract:** We studied the bacterial response to Fe fertilization over 3 weeks during the second iron-enrichment experiment (EisenEx) in the Southern Ocean. Bacterial abundance in the Fe-fertilized patch increased over the first 12 d following Fe release and remained about twice as high as outside the Fe-fertilized patch until the end of the experiment. Bacterial production peaked a few days after each of the three Fe releases inside the Fe-fertilized patch, reaching rates two to three times higher than outside the patch. Besides the peaks in leucine and thymidine incorporation following Fe release, bacterial production was not significantly higher inside the patch than outside, suggesting direct limitation of bacterial growth by Fe. Bacterial aminopeptidase activity roughly followed the increase in bacterial abundance, whereas cell-specific  $\beta$ - and  $\gamma$ -glucosidase were higher inside the Fe-fertilized patch. The diversity of  $\beta$ -glucosidases was similar inside and outside the patch. Three additional  $\beta$ -glucosidases showed much higher activity levels inside the patch than in the surrounding waters, and three additional  $\gamma$ -glucosidases constituting 15% of the total  $\gamma$ -glucosidase activity were present inside the Fe-fertilized patch from day 9 onward. No major changes in response to Fe fertilization were detected in the phylogenetic composition of the bacterioplankton community, as determined by 16S rDNA fingerprinting, indicating a remarkable adaptation of the bacterioplankton community to episodic iron inputs. This stability on the phylogenetic level is contrasted by the dramatic qualitative and quantitative changes in ectoenzymatic activity.

m\_cdr.focus: specific\_micr\_m\_cdr.method: ocean\_fertilization, paper\_type: original\_research, paper\_type: ecological, biological, environmental\_improvement, habitat: open\_ocean, species: senativity, type\_of\_method.used: field\_study, adjacent\_topic\_to: fisheries, lower\_trophic\_nutrient\_dynamics, ocean\_basin: southern\_ocean, habitat\_type: open\_ocean, depth: mid\_depth, surface, experiment\_location: field, taxon: microbes, phytoplankton, exposure: mineral, chemical\_mineral\_added: iron\_sulfate, response\_observed: response(s), observed

Example of “Reports” tab