

# lit-tag-builder app guide

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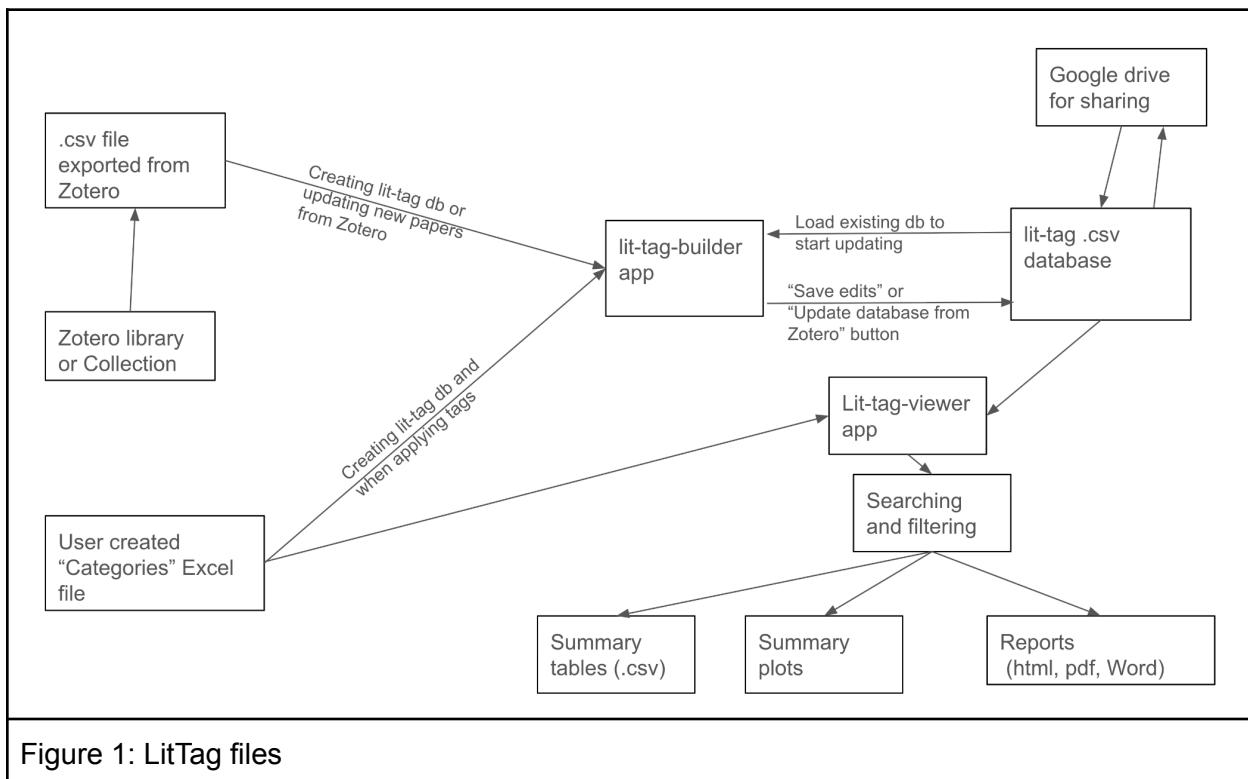
2025.11.17

## Overview

The “lit-tag” project is a set of two R Shiny apps (“lit-tag-builder” and “lit-tag-viewer”) that are used to create and display a database that adds tags to the output of a Zotero library. The apps are generic with regard to subject matter - the user picks the Zotero library and defines the tag and notes fields. This guide describes the Builder app used by database builders to add tags to each of the papers in an exported Zotero file.

## Zotero export file

The project starts with the creation of a Zotero library on the subject of interest. The Zotero library (or collection within the library) is then exported as a .csv file. (Figure 1). The zotero file only needs to be generated when creating a new lit-tag db or periodically when you want to add new papers to the lit-tag db from the zotero library. The lit-tags apps do not directly interact with the Zotero app; all interaction occurs indirectly through files exported from Zotero or imported to Zotero.



# Interface Overview

The lit-tag-builder has five main tabs: “Tag edit”, “Sync Zotero” “Database Maintenance”, “New Zotero” and “Help” (Figure 2).

The screenshot shows the lit-tag-builder application window. At the top left is a red crab icon and the text "lit-tag-builder". To its right are five tabs: "Tag edit" (underlined in red), "Sync Zotero", "Database Maintenance", "New Zotero", and "Help". The "Tag edit" tab is active. Below the tabs are three main sections: "Paper table" (left), "Paper info and notes" (middle), and "Tags" (right). The "Paper table" section contains fields for "Database File" (with "Browse..." and "No file selected" buttons) and "Categories File" (with "Browse..." and "No file selected" buttons), along with "Load database", "Exclude obsolete papers" (checked), "Filter variables" (dropdown menu "Select"), and "Filter database" and "Show all papers" buttons. The "Paper info and notes" section has a "Save edits" button. The "Tags" section is currently empty.

Figure 2: Screen shot of opening user interface

## Help

The “Help” tab has options for a display and pdf download of this user guide (Figure 3) and the download of two example datasets: Unicorn example and mCDR example (Figure 4). The example files are .zip files containing .csv and excel files. The unicorn example started with a search of Google Scholar using the search term “unicorn”. Most of the first 41 papers (excluding those without a publication year) were imported into a Zotero library using the Zotero connector browser extension. Those references and the generated example files are highlighted in this user guide. The unicorn paper collection and annotation in lit-tag-builder serve no known academic purpose - they are just to demonstrate how lit-tag-builder works. The mCDR example, on the other hand, is based on partial results from a tagging of papers related to the interaction of marine carbon dioxide removal (mCDR) and fisheries (Grabb et al. in prep.)

The screenshot shows the 'lit-tag-builder' application interface. At the top, there are tabs for 'Tag edit', 'Sync Zotero', and 'Help'. The 'Help' tab is active, displaying a user guide titled 'lit-tag-builder app guide' by Paul McElhaney from 2025.06.18. The guide is a PDF document with 7 pages, currently on page 1. The left sidebar shows a table of contents with three sections: '1 lit-tag-builder user guide', '2 Using with Zotero', and '3 Using with Google Drive'. Below the sidebar is a large preview area of the PDF content.

Figure 3: Help tab showing user guide.

The screenshot shows the 'lit-tag-builder' application interface. At the top, there are tabs for 'Tag edit', 'Sync Zotero', 'Database Maintenance', 'New Zotero', and 'Help'. The 'Help' tab is active. In the main content area, there is a section titled 'example files' with two download links: 'Unicorn db example files' and 'mCDR db example files', both represented by orange buttons with white text.

Figure 4: Help tab showing example file download.

## Making a new lit-tag-database

This section describes making a new lit-tag database from an existing Zotero library or collection. The section below titled “New zotero”, describes how to create a new zotero library from an existing lit-tag database.

# File types

Making a lit-tag database requires three different file types. A Zotero .csv export file, a "Categories" excel file and an initial empty lit-tag-database .csv file.

## Zotero export

The Zotero export file is created in the Zotero desktop app by right clicking on the collection (or entire library) and selecting “Export collection...” then selection format “CSV” (Figure 5). In the Unicorn Example download the zotero export file is named “unicorn\_zotero.csv”. There is no zotero download file example in the mcdr example download.

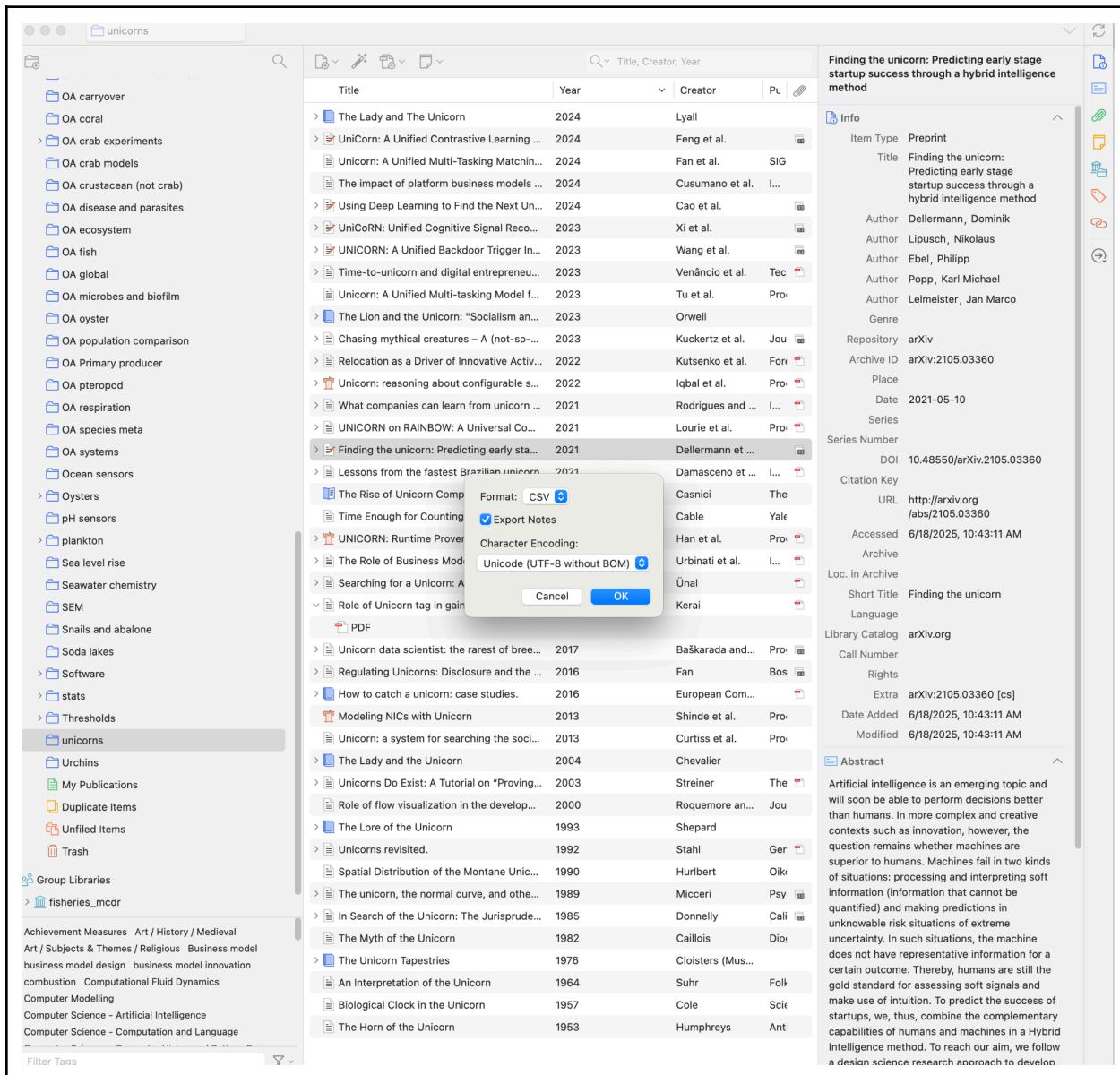


Figure 5: Screen shot of exporting .csv file from Zotero.

## Categories File

The categories file is a user-created excel file that defines the tag variables, the tag value choices and the category structure for tags. In the file, each tab defines a general category for grouping tags in the app user interface. There is no limit to the number of categories (tabs) and the names of the categories are up to the user. There must be one tab named “notes” (more on this below).

Within the category tabs, each column provides information on one tag. The first row is the name of the tag and the second row is the type of input used in the interface of the lit-tag-builder app. Options for the type of input on the second row are: “check\_box\_single”, “check\_box\_multiple”, “text\_box” or “date”. The rows below the type of input are the potential tag value options that will be selected by the user. There is no limit to the number of tags (columns) on each category tab and there is no limit to the number of tag value options (rows) for each tab. The tags can be named whatever is informative and in a format (e.g. spaces) that will look nice in the user interface.

The “notes” tab lists the notes fields that will be associated with each of the papers. The notes fields have a different type of user interface that can allow for the input of a lot of text and the notes are located in a different part of the user interface from the tags. The “notes” tab has only one column of data. The first row has the label “Notes” the second row specifies the type “text\_area”. The rows below the input type (“text\_area”) specify the names of notes fields. There is no limit to the number of notes fields that can be included.

The categories file can be changed even after you have been working with a database and tagging files. This might happen if you decide to add more categories, tags or tag value options. However, it can be challenging to maintain a consistently tagged database if you change the categories file often or dramatically. It is best to get this right (or at least very close) before you start tagging.

In the unicorn example download, the categories file is named “unicorn\_categories.xlsx” and in the mcdr example download, the categories file is named “categories\_11\_public.xlsx”.

## Initial empty .csv file

The current version of lit-tag-builder requires an empty .csv file for the creation of the new lit-tag database. An empty .csv file can be created by opening a new blank excel notebook, not making any changes, then saving as a .csv file. The name of the empty csv file does not matter. The empty .csv file in the unicorn example is named “unicorn\_lit\_tag\_empty.csv”. (Future versions of lit-tag-builder will likely not require the need for an empty .csv file to create a new database.)

## Step for creating a new lit tag database

Note that this only needs to be done once! After creating the initial database, you never need to mess with an empty .csv file again and only need to deal with zotero export files if you want to add more papers to the lit-tag database or fix typos or omissions in the zotero library (more on fixing zotero errors below).

1. On the “Tag edit” tab browse to the empty .csv file for the “Database File” and the categories excel file for the “Categories File”.
2. Click the “Load database” button. This will display information that there are zero papers in the database and show the tag categories (Figure 6)
3. On the “Sync Zotero” tab, browse to the zotero export file.
4. Click the “Update database from Zotero” button. This will display information about how many papers were added to the lit-tag database. The new lit-tag database is then automatically downloaded to the users default download location (Usually the “Downloads” folder). The downloaded file will have the same name as the empty .csv file with the date and time (UTC) appended. The appended date has the format “year\_month\_day\_time\_timezone”. The time stamps are always in UTC to aid in collaboration of multiple people working on tagging for the same project in different time zones (more on collaboration workflows below). The contents of the lit-database file is described in the next section.

The screenshot shows the lit-tag-builder application interface. At the top left is a red crab logo and the text "lit-tag-builder". The top navigation bar includes "Tag edit" (highlighted in red), "Sync Zotero", "Database Maintenance", "New Zotero", "Help", and other links.

**Paper table** section:

- Database File:** Shows "unicorn\_lit\_tag\_empty" uploaded from "Browse...".
- Categories File:** Shows "unicorn\_categories.xls" uploaded from "Browse...".
- Load database** button.
- Papers in database:** 0
- Papers in filtered database:** 0
- Exclude obsolete papers** checkbox (checked).
- Filter variables** dropdown menu.
- Filter database** and **Show all papers** buttons.

**Paper info and notes** section:

- Save edits** button.
- Abstract** section (empty).
- general\_impression\_notes** section (empty).
- most\_interesting\_thing\_notes** section (empty).

**Tags** section:

- general**, **location**, **tagging** buttons.

Figure 6: Screen shot of result from loading the empty unicorn database and unicorn categories file.

The screenshot shows the lit-tag-builder application interface with the "Sync Zotero" tab highlighted in red. The top navigation bar includes "Tag edit", "Sync Zotero" (highlighted in red), "Database Maintenance", "New Zotero", "Help", and other links.

**Zotero CSV File** section:

- Browse...** button, "unicorns\_zotero.csv" selected.
- Upload complete** button.
- Update database from Zotero** button.
- Initial papers in db:** 0
- Papers in Zotero file:** 41
- New paper keys in Zotero:** 41
- Old paper keys in db but not Zotero:** 0
- Papers in new db:** 41

Figure 7: Figure 6: Screen shot of creating new unicorn lit-tag database from "sync zotero" tab.

## LitTag Database

The LitTag database is a .csv file with a header row with the names of the fields imported from zotero, the tags and note fields from the categories file, plus a few housekeeping fields added by the lit-tag-builder app. Below the header there is one row for each paper. In general, avoid directly manipulating this file. It is best to use the lit-tag builder app to make changes or you may break the file so that it will not work properly in lit-tag-builder or lit-tag-viewer. However, this is just a plain .csv file and can be imported for analysis (e.g to make publication quality graphs) or (rarely) editing in other software (e.g. R). The lit-tag-viewer app uses the lit-tag database (or a copy) as the input for making pretty graphs, summary tables and filtered data sets and reports based on the zotero and tag fields. Although only a subset of the Zotero exported fields are displayed in lit-tag-builder or lit-tag-viewer, the database retains all the original zotero export fields, which could be used for external analysis.

## Tag Editing

### Load database and categories

The database and categories files must be loaded before starting to tag. On the “Tag edit” tab, browse to the lit-tag database .csv file and the categories excel file. Then click the “Load database” button (Figure 8).

The screenshot shows the 'Tag edit' tab of the lit-tag-builder application. The interface is divided into three main sections:

- Paper table (Left Panel):** Displays basic statistics (Papers in database: 41, Papers in filtered database: 41) and a checkbox to exclude obsolete papers. It includes a dropdown for filter variables and two buttons: 'Filter database' and 'Show all papers'. A table lists papers with columns for first\_author, publication\_year, and title. The table includes rows for Baškarada (2017), Cable (2021), Cailliois (1982), Cao (2024), Casnici (2021), Chevalier (2004), Cloisters (1976), Cole (1957), Curtiss (2013), and Cusumano (2024).
- Paper info and notes (Center Panel):** Shows the selected paper's details: Authors: Cailliois, Roger; Year: 1982; Title: The Myth of the Unicorn; Journal: Diogenes. It features a 'Save edits' button and two note sections: 'general\_impression\_notes' (sounds kinda deep) and 'most\_interesting\_thing\_notes' (The octopus, the praying mantis and the fulgora... is a taxonomically odd collection).
- Tags (Right Panel):** Contains tabs for general, location, and tagging, with 'general' selected. It includes sections for General topic (radio buttons for art, business, computer\_program, literature, other, unicorn\_animal, with art selected), Paper title attitude (radio buttons for serious, skeptical, unknowable, with serious selected), Did they pet unicorn (radio buttons for no, yes, with no selected), and Paper in one word (text input field containing 'happy').

Figure 8: Tag Editing window example

## Tagging window

The tag editing tab is divided into three panels. The left panel primarily contains a table with basic info on the papers in the database that is used to select a paper for tag editing, the center panel includes a bit more information about the paper selected and fields to enter notes, and the right panel has radio buttons, check boxes and text entry fields for tagging a particular paper.

The left panel has input fields for the database and category file urls. If default urls have been saved (see “settings” tab) the default urls will be displayed when the app starts. You can use the defaults or replace them with different urls. The categories file will define which tags and notes are displayed in the center and right panels. If the categories file has been modified since the initial database was created, old tags may be present in the database but only displayed if they are included in the categories file pointed to by the url. Pressing the “Load database” button populates the database table, notes and tags of the ui. After updating a database using the “Update database from Zotero” button, you should run “Load database” to bring the new

papers into the display. The left panel also displays the total number of papers in the database and the number of papers shown in the table after filtering (more on filtering below). Clicking on a row of the papers table selects that paper for tag editing.

In the center panel the “Save edits” button saves any tag edits to the database. All changes to tag edits on all papers are instantly saved in working memory, but the changes are not saved to the database file until you press the “Save edits” button. This is important. The center panel includes a little more detail about the selected paper (complete author list, year, title, journal) and a button to pop up the paper abstract. The rest of the center panel contains fields to enter the reviewer notes about the paper. After clicking the “Save edits” button, a new version of the database is downloaded to your downloads file with the same filename as the original database file, but with a UTC time stamp appended. This can generate a lot of files in your download file if you save often (which you should). When opening a file for tagging next time, make sure you use the file with the most recent time stamp.

The right panel is the place to view and edit tags for a paper. Each of the tabs is a tag category (as defined by the tabs of the categories file). Selecting a tab displays the list of options for all of the tags in that category. This panel is a lot of fun if you like check boxes.

# Filtering

The screenshot shows the lit-tag-builder application interface. At the top, there is a logo of a crab and the text "lit-tag-builder". To the right of the logo are navigation links: "Tag edit" (which is red and underlined), "Sync Zotero", "Database Maintenance", "New Zotero", and "Help".

The main interface is divided into three main sections:

- Paper table**: This section contains "Database File" and "Categories File" upload fields, both with "Browse..." and "Upload complete" buttons. It also includes a "Load database" button and displays the count of papers in the database (41) and the filtered database (1). A checkbox "Exclude obsolete papers" is checked. Below this is a "Filter variables" dropdown menu set to "paper\_title\_attitude, publication\_year". Under "filter\_paper\_title\_attitude", the "skeptical" checkbox is checked. Under "filter\_publication\_year", the years 2021, 2022, 2023, and 2024 are selected. There are "Filter database" and "Show all papers" buttons at the bottom.
- Paper info and notes**: This section shows "Paper info and notes" with a "Save edits" button. It lists the author (Cable, Abraham J. B.), year (2021), title (Time Enough for Counting: A Unicorn Retrospective), and journal (Yale Journal on Regulation Bulletin). It also shows an "Abstract" note: "Abstract not in db, so just evaluated based on title. No idea what this paper is about." and a "most\_interesting\_thing\_notes" note: "maybe this is not interesting?"
- Tags**: This section allows users to filter by tags. It has tabs for "general", "location", and "tagging", with "general" selected. Under "general", the "other" option is checked. Other categories like "art", "business", "computer\_program", "literature", and "unicorn\_animal" are listed with their respective radio buttons. Under "Paper title attitude", the "skeptical" option is checked. Under "Did they pet unicorn", the "no" option is checked. Under "Paper in one word", the input field contains "extreme".

At the bottom of the main interface, there is a search bar with the placeholder "first\_author ⌂ publication\_year ⌂ title" and a "Search" button.

Figure 9: Example filtering

In editing the papers, it is helpful to filter the paper table. For example, it might be helpful to only look at high priority, non-obsolete papers that have not yet been reviewed. It is possible to filter on any field in the database (i.e. zotero, tags, notes and db timestamp fields). The fields to use for filtering are selected in the “Filter variables” dropdown menu (Figure 9). Once the variables for filtering are selected, check boxes of the values in the database for those variables are displayed below the “Filter variables” dropdown input. After checking the values that you want to include in the filtered dataset, click the “Filter database” button. The filtered database then appears below the filter selection button and can be used to pick papers for tagging. To remove the filtering, click the “Show all papers” button.

The screenshot shows the Lit Tagger Input application interface. At the top, there are tabs for 'Lit Tagger Input' (selected), 'Tag edit', 'Sync Zotero', and 'Settings'. In the 'Paper table' section, there are two input fields: 'Database URL' containing 'https://docs.google.com/spreadsheets/d/11xuifNSTmEcwckX4BCigzklOIM35Te7gi2...' and 'Categories URL' containing 'https://docs.google.com/spreadsheets/d/1w4tkaBdf2AkGxLa-aEHhyfxc\_29zzxD-i3/'. Below these are buttons for 'Load database' and 'Papers in database: 369'. A dropdown menu for 'Papers in filtered database: 3' includes filters for 'filter\_date\_time\_obsolete\_db' (NA selected), 'filter\_paper\_review\_status' (abstract\_reviewed selected), and 'filter\_review\_priority' (review\_priority\_1 selected). The main table lists three papers:

| first_author | publication_year | title  |
|--------------|------------------|--|
| Adkins       | 2021             | The Dissolution Rate of CaCO <sub>3</sub> in the Ocean                         |
| Blaufelder   | 2021             | A blueprint for scaling voluntary carbon markets to meet the climate challenge |
| Eisaman      | 2023             | Assessing the technical aspects of ocean-alkalinity-enhancement approaches     |

In the 'Paper info and notes' section, there are fields for 'Save Edits', 'Authors' (Blaufelder, Christopher; Levy, Cindy; Mannion, Peter; Pinner, Dickon), 'Year: 2021', 'Title: A blueprint for scaling voluntary carbon markets to meet the climate challenge', 'Journal: NA', and 'Abstract'.

The 'Tags' section has tabs for 'general', 'review\_status' (selected), 'location', 'species', and 'treatment'. Under 'review\_status', 'review\_priority\_3' is selected. Other review priority options include review\_priority\_1, review\_priority\_2, review\_priority\_4, and review\_priority\_5. There are also sections for 'Paper review status' (no\_review selected), 'Assigned reviewer' (no\_reviewer\_assigned selected), and 'Reviewer' (no\_review selected).

**Figure 5: Example filtering on the “date\_timeObsolete\_db”, “paper\_review\_status” and “review\_priority” fields.**

## Updating the categories file

The categories file will be used to create tag fields for the new papers that are added to the LitTag database. The categories file will generally be the same one used for the original database creation and previous updates. However, the categories file could be a modification of the previous categories files with added or removed tags. The new database will include all the tags that were added originally and in previous updates plus any new tags in the new modified categories files. To prevent loss of previously entered tag information, tag fields are never removed from the database, but old data from “discarded” tags may be tricky to access in the LitTag builder app. There is more information in this in the “Editing tags” section of this guide

## Syncing with Zotero

It is important to note that the lit-tag-builder app does not directly interact with the Zotero app in any way. The lit-tag-builder app uses as input static files exported from Zotero, therefore updating the papers in the lit-tag database is done at discrete intervals whenever the user decides it would be useful.

The lit-tag-builder app uses the “keys” field generated by Zotero as the mechanism to sync exported zotero libraries or collections and the associated lit-tag database. When a document reference is added to a Zotero library, zotero creates a unique internal key (string of letters and numbers) for that entry. Two different zotero libraries will have two different keys for the exact same paper. Therefore, it is essential that when updating a lit-tag database with an updated exported zotero library that you are using the same Zotero library that was used to initially create the lit-tag database. If multiple people are working on the same lit-tag project, a Zotero group library is a great option for managing the Zotero side of things.

To sync with an updated Zotero file, load the latest database and categories file on the “Tag edits” tab, then browse to the new Zotero download file on the “Sync Zotero” tab. Then click the “Update database from Zotero” button. This will save a new version of the database with a new time stamp that includes the new references from Zotero and updated Zotero data (e.g. corrected typos in Zotero) for existing papers. Before tagging, it is best to restart lit-tag-builder and then load the new database.

After pressing the “Update database” button, the app will add any papers from the zotero file that are not already in the database (based on comparing keys). The tags for the newly added papers will all be missing (i.e. no option selected and notes fields are blank). The app displays how many papers were in the database before the update, the numbers of papers in the zotero export file, and the number of new papers added to the database. There can also be papers that are in the original database that have no matching keys in the zotero database. This can occur when papers are deleted from the zotero library after they have already been added to the lit-tag database. To avoid losing any data, these “obsolete” papers are not deleted from the database (however, they can be filtered out). The database field “date\_time\_added\_db” contains a timestamp of the date that a paper was added to the database. The database field “date\_time\_obsolete\_db” contains a time stamp of the date that a paper was flagged as obsolete (no longer in the zotero library) during a sync operation. The obsolete papers can be excluded from tagging operations by filtering on the date\_timeObsolete\_db field (see “filtering” section).

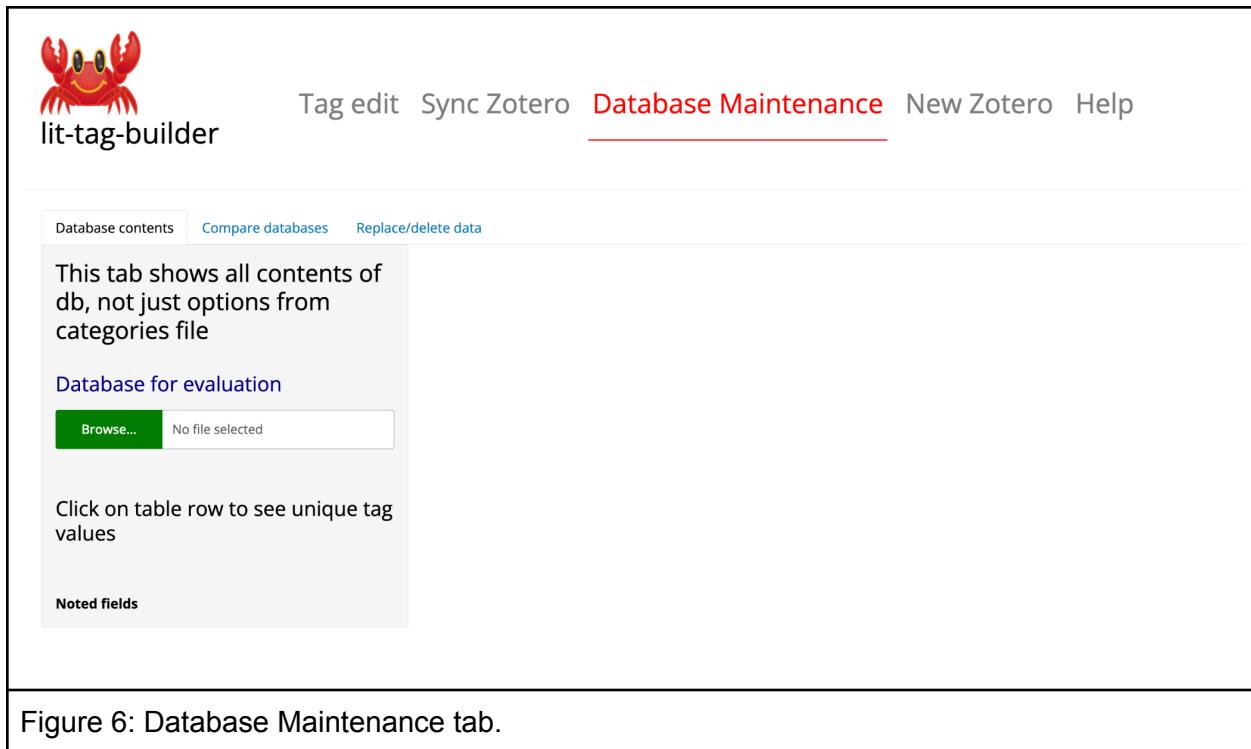
## Database Maintenance

The Database Maintenance tab provides options for looking at the contents and “cleaning up” the lit-tag base. The Database Maintenance tab has three sub-tabs: 1) Database contents, 2) Compare databases, and 3) Replace/delete data (figure 6).

### Database contents

The shows the names of all the tag field and the number of unique values in the actual database (Figure 7). By click on the name of a tag in the data, the unique values in the database can be displayed (Figure 8). It is important to understand the distinction between the categories file and the database. The categories file is used to create the user interface for the tag editing in

lit-tag-builder and for display and filter options in lit-tag-viewer. The user can change the categories file over time, for example, if it is decided that one of the tags is not very informative and can be eliminated. However, if the tag was used for previous versions of the database, the old values are part of the database and will show up when viewing the database contents. These, old, unused values could be targets for deletion (as described in a later section).



The screenshot shows the 'Database Maintenance' tab in the lit-tag-builder application. At the top, there is a red crab logo and the text 'lit-tag-builder'. The menu bar includes 'Tag edit', 'Sync Zotero', 'Database Maintenance' (which is underlined in red), 'New Zotero', and 'Help'. Below the menu, there are three tabs: 'Database contents' (selected), 'Compare databases', and 'Replace/delete data'. A descriptive message states: 'This tab shows all contents of db, not just options from categories file'. Under 'Database for evaluation', there is a 'Browse...' button and a field showing 'No file selected'. A note says: 'Click on table row to see unique tag values'. At the bottom left, there is a 'Noted fields' section.

Figure 6: Database Maintenance tab.



lit-tag-builder

Tag edit Sync Zotero **Database Maintenance** New Zotero Help

[Database contents](#) [Compare databases](#) [Replace/delete data](#)

This tab shows all contents of db, not just options from categories file

Database for evaluation

Browse... mcdrlit.tag\_db\_20; Upload complete

Click on table row to see unique tag values

Number of papers in database: 870

**Noted fields**

|            |               |                      |                           |           |              |
|------------|---------------|----------------------|---------------------------|-----------|--------------|
| Notes name | summary_notes | mcdr_relevance_notes | fisheries_relevance_notes | odd_notes | author_notes |
|------------|---------------|----------------------|---------------------------|-----------|--------------|

Tag name Number of unique values

| Tag name                    | Number of unique values |
|-----------------------------|-------------------------|
| adjacent_topic_to_fisheries | 8                       |
| adjacent_topic_to_m_cdr     | 8                       |
| chemical_mineral_added      | 9                       |
| date_last_reviewed          | 71                      |
| date_time_added_db          | 3                       |
| date_time_obsolete_db       | 1                       |
| depth                       | 5                       |
| experiment_location         | 4                       |
| exposure                    | 9                       |
| geopolitical_area           | 9                       |
| habitat_type                | 6                       |
| life_stage                  | 5                       |
| m_cdr_focus                 | 3                       |
| m_cdr_method                | 7                       |
| ocean_basin                 | 10                      |
| paper_review_status         | 4                       |
| paper_topic                 | 24                      |
| paper_type                  | 6                       |
| response_observed           | 3                       |
| species_common_name         | 149                     |
| species_scientific_name     | 271                     |
| taxon                       | 10                      |
| type_of_method_used         | 7                       |

Figure 7: Example database contents



## Compare databases

The Compare databases tab is used to find papers that are in one database but not in another (based on comparing zotero key values). This is useful for a before/after comparison of database after a “Sync zotero” operation or after deleting papers based on tag criteria (described below).

The screenshot shows the 'lit-tag-builder' application interface. At the top, there is a red crab logo and the text 'lit-tag-builder'. The menu bar includes 'Tag edit', 'Sync Zotero', 'Database Maintenance' (which is highlighted in red), 'New Zotero', and 'Help'. Below the menu, there are tabs for 'Database contents' and 'Compare databases'. The 'Compare databases' tab is active.

**Database to compare #1:**

- Browse... mcdr\_lit\_tag\_db\_2025\_10
- Upload complete

**Database to compare #2:**

- Browse... mcdr\_lit\_tag\_db\_2025\_10
- Upload complete

**Compare databases**

Number of papers in database #1: 870  
Number of papers in database #2: 868

**Papers in db #1, but not in db #2**

| Key      | First Author | Year | Title   |
|----------|--------------|------|---|
| 9KSYMQFP | Balch        | 2009 | Chalk-Ex—Fate of CaCO <sub>3</sub> particles in the mixed layer: Evolution of patch optical properties            |
| SJPLJSPJ | Giri         | 2000 | Effects of Frequent, Small Doses of Calcium Carbonate on Water Quality and Phytoplankton in Channel Catfish Ponds |

**Papers in db #2, but not in db #1**

| Key                        | First Author | Year | Title |
|----------------------------|--------------|------|-------|
| No data available in table |              |      |       |

Figure 9: Example compare database.

## Replace/delete data

The Replace/delete data tab is used to alter the contents of the database. It is useful for cleaning operations for tasks such as fixing typos in tag and tag option names or deleting unused tags. Downloading a change from a replace/delete action, results in the creation of a new database with the same name as the original but with an appended current timestamp.

### Replace tag name

Replaces the old tag name with the new tag name (Figure 10). This is a global replacement in the database. A version of the categories file should be used in the future that uses the new tag name.

Tag edit Sync Zotero **Database Maintenance** New Zotero Help

Database contents Compare databases Replace/delete data

Database to replace/delete

Browse... mcdr\_lit\_tag\_db\_2025 Upload complete

These options download a new database with the selected change

Replace tag name **Replace tag option name**  
Delete tags Delete tag options  
Delete papers not in zotero Delete papers based on tag options

Old tag name: chemical\_mineral\_added  
New tag name: chem\_mineral

Download database with replaced tag name

Figure 10: Screen shot of Replace/delete data screen.

## Replace tag option name

Replaces the old tag option name with the new tag name (Figure 11). This is a global replacement in the database. A version of the categories file should be used in the future that uses the new tag option name.

lit-tag-builder

Tag edit Sync Zotero Database Maintenance New Zotero Help

Database contents Compare databases Replace/delete data

Database to replace/delete

Browse... mcdr\_lit\_tag\_db\_2025 Upload complete

These options download a new database with the selected change

Replace tag name

**Replace tag option name**

Delete tags

Delete tag options

Delete papers not in zotero

Delete papers based on tag options

Tag name: chechmial\_mineral\_added

Old option name: naoh

New option name: sodium\_hydroxide

Download database with replaced tag option name

Figure 11: Example replace tag option name

## Delete tags

Specify tags that are to be deleted because they are no longer used. The tags are specified as a comma separated list.

The screenshot shows the 'Database Maintenance' section of the lit-tag-builder application. At the top, there is a red crab logo and the text 'lit-tag-builder'. The navigation bar includes 'Tag edit', 'Sync Zotero', 'Database Maintenance' (which is underlined in red), 'New Zotero', and 'Help'. Below the navigation, there are three buttons: 'Database contents', 'Compare databases', and 'Replace/delete data'. The 'Replace/delete data' button is highlighted with a blue border. A message below says 'These options download a new database with the selected change'. On the left, a sidebar lists several options: 'Replace tag name', 'Replace tag option name', 'Delete tags' (which is highlighted with a blue background), 'Delete tag options', 'Delete papers not in zotero', and 'Delete papers based on tag options'. On the right, there is a text input field labeled 'Tags to delete (comma seperated)' containing 'chemical\_mineral\_added, depth'. Below it is a large orange button with a download icon and the text 'Download database with deleted tags'.

Figure 12: Screenshot of tag deletion.

## Delete tag options

Delete tag option from database because they are no longer needed. The tag options are specified as “tag/option” and multiple options with a comma separated list. For example, “depth/med\_depth, life\_stage/egg” would delete both the mid\_depth option from the depth tag and the egg option from the life\_stage field.

The screenshot shows the lit-tag-builder application interface. At the top, there's a red crab logo and the text "lit-tag-builder". The navigation bar includes "Tag edit", "Sync Zotero", "Database Maintenance" (which is highlighted in red), "New Zotero", and "Help". Below the navigation, there are tabs for "Database contents", "Compare databases", and "Replace/delete data". A section titled "Database to replace/delete" shows a "Browse..." button and the file path "mcdr\_lit\_tag\_db\_2025", with a note "Upload complete". On the left, a sidebar lists options: "Replace tag name", "Replace tag option name", "Delete tags", "Delete tag options" (which is highlighted in blue), "Delete papers not in zotero", and "Delete papers based on tag options". On the right, there's a form with the instruction "Tag options to delete (specify as 'tag/option', comma separated):" followed by the input "depth/mid\_depth, life\_stage/egg". At the bottom right, there's a large orange button with the text "Download dataset with deleted tag options".

Figure 13: Screenshot of delete tag options.

## Delete papers not in Zotero

This is a way to permanently delete obsolete papers from the database.

The screenshot shows the 'lit-tag-builder' application interface. At the top, there is a red crab logo, the text 'lit-tag-builder', and a navigation bar with 'Tag edit', 'Sync Zotero', 'Database Maintenance' (which is highlighted in red), 'New Zotero', and 'Help'. Below the navigation bar, there are three buttons: 'Database contents', 'Compare databases', and 'Replace/delete data' (which is highlighted in blue). A message 'Database to replace/delete' is displayed above a list of options: 'Replace tag name', 'Replace tag option name', 'Delete tags', 'Delete tag options', 'Delete papers not in zotero' (which is highlighted in blue), and 'Delete papers based on tag options'. To the right, there is a section titled 'Zotero for delete comparison' with a 'Browse...' button and a message 'No file selected'. At the bottom, there is a large orange button with the text 'Download database with papers not in Zotero deleted' and a download icon.

These options download a new database with the selected change

Figure 14: Screenshot of delete papers not in zotero.

## Delete papers based on tag options

This can be useful for elementing papers that are out of scope of your database or make a new, filtered database with a subset of the original data. It is probably good practice to include an “out\_of\_scope” option in your tag list to make it easy to remove unwanted papers. The tag options to delete are specified as “tag/option” and multiple options with a comma separated list.

The screenshot shows the lit-tag-builder application interface. At the top, there is a red crab logo and the text "lit-tag-builder". The navigation bar includes "Tag edit", "Sync Zotero", "Database Maintenance" (which is underlined in red), "New Zotero", and "Help". Below the navigation, there are three tabs: "Database contents", "Compare databases", and "Replace/delete data". The "Replace/delete data" tab is selected. A sub-section titled "Database to replace/delete" shows a "Browse..." button and a file path "mcdr\_lit\_tag\_db\_2025". A message "Upload complete" is displayed below the browse button. A note states "These options download a new database with the selected change". On the left, a sidebar lists several options: "Replace tag name", "Replace tag option name", "Delete tags", "Delete tag options", "Delete papers not in zotero", and "Delete papers based on tag options". The last option is highlighted with a blue background. On the right, there is a text input field labeled "Tag options for paper deletion (specify as \"tag/option\", comma separated)" containing "paper\_importance/not\_in\_scope". Below this is a large orange button with a download icon and the text "Download database with paper deletion based on tag options".

Figure 15: Screen shot of delete papers based on tag options.

# New Zotero

The New Zotero tab provides the ability to make a new zotero library linked (via matching keys) to a copy of an existing lit-tag database (Figure 16). The new zotero library and its associated new lit-tag database can then diverge independently from the original zotero library and database.

The screenshot shows the 'New Zotero' tab selected in the top navigation bar. On the left, there's a red crab icon and the text 'lit-tag-builder'. The main area has two sections: 'Old Keys Database File' and 'New Keys Zotero File'. Both sections have 'Browse...' buttons, file names ('mcdr\_lit\_tag\_db\_2015.ris'), and 'Upload complete' status messages. Below each section is an orange 'Generate RIS' or 'Generate new keys database' button. To the right of these sections, there's a summary of paper counts: 'Number of papers in original (old keys) database: 870', 'RIS file generated from original database downloaded', 'Number of papers in zotero file with new keys: 870', 'Number of papers in new keys database: 870', and 'Number of papers with missing keys in new keys database: 0'.

Figure 16: Screenshot of new zotero.

## Steps for new Zotero

1. **Create an RIS file from the original lit-tag database.** An RIS (Research Information Systems) file is a standardized citation file format that can be imported into Zotero. The “Generate RIS” button on the New Zotero tab will extract the citation information from the “old keys” lit-tag database and make a file in RIS format. The citation information includes data like title, publication year, authors, journal, abstract, etc. It does not include tags or notes created in lit-tag. The generated file will be downloaded to the default downloads folder have the same name as the original old keys lit-tag database, but with a “.ris” extension.
2. **Import the RIS file into Zotero.** Import either into a new collection in your library or into a shared Zotero library. When the citations are imported, Zotero will generate new key associated the references. These keys will not match the “old keys” database file. After RIS generation, the information panel in the New Zotero tab will display the number of papers converted to RIS format from the old keys database.

3. **Export zotero collection as CSV file.** In Zotero, export the collection to a csv file. Do not make any changes to the zotero collection between importing the RIS file and exporting the csv file.
4. **On the New Zotero tab, select the exported Zotero CSV file.** Use the Browse button to select this file.
5. **Generate a new keys lit-tag database.** The Generate new keys database button, takes the original “old keys” database and replaces the keys with the new keys from the new zotero collection. The key replacement is done by matching the publication year, author list and title from the exported Zotero csv file and the original old keys database. The generated new keys lit-tag database is placed in the default downloads folder and has the same name as the zotero CSV file, but with a current time stamp appended.
6. **Use the new Zotero library and new tags database.** The functionality of the Sync Zotero tab can now be used to modify the new lit-tag database to incorporate changes in the new Zotero library collection.

## Caveats for New Zotero

- The new zotero file will only contain citation information. It will not contain any linked pdf files. With the current workflow, pdf files would need to be imported manually into the new Zotero collection for each paper.
- The RIS format does not map perfectly to Zotero field options. For example, the RIS format does not support the item\_type “preprint” so paper are coded as “UNPB” (unpublished). Most fields have a direct match, but there is occasionally a loss of information in the RIS format conversion.
- Lit-tag-builder has no built-in functionality to merge two different, but related, zotero libraries with associated lit-tag libraries that have different keys. There may occasionally be workflows in which the ability to merge could be useful (for example, if a new library is created from an existing lit-tag database and it is developed independently to diverge from the original, then someone wants to combine the two libraries.). A merge would be possible, but it would require creation of a new, merged zotero library and manual coding to combine the lit-tag files and link all the keys. For now, it is probably a good idea to avoid workflows that require merging.