Manual for LERNZdb:

A repository for freshwater quality and biodiversity measurement data
Contents

1. This manual ...........................................................................................................3

2. LERNZdb description and overview ........................................................................3
   2.1 Background .......................................................................................................3
   2.2 Our philosophy .................................................................................................4
   2.3 Some background on submitting data ...............................................................5

3. Assembling and submitting data ............................................................................6
   3.1 Registering for an account ................................................................................6
   3.2 Start the submission process .............................................................................7
   3.3 The actual submission process ...........................................................................7

4. Reviewing data .......................................................................................................19

5. Downloading data ..................................................................................................29
   5.1 Searching for data ............................................................................................31
1. This manual

This LERNZdb documentation and manual is prepared for users of LERNZdb and includes the following:

- A description of LERNZdb
- A description of the philosophy and ideas behind LERNZdb and sharing research data in general
- A description of the process of preparing, submitting, reviewing and downloading data to and from LERNZdb

LERNZdb is available at [http://lernzdb.its.waikato.ac.nz](http://lernzdb.its.waikato.ac.nz) and can be contacted at lernzdb@waikato.ac.nz.

2. LERNZdb description and overview

2.1 Background

LERNZdb is a repository for freshwater quality and biodiversity measurement data in New Zealand. It was developed as part of the Lake Ecosystem Restoration New Zealand (LERNZ) programme in co-operation between the Information & Technology Services Division (ITS) and LERNZ researchers at the University of Waikato. The purpose of LERNZdb is to enable LERNZ researchers and others to share, use and re-use New Zealand freshwater quality and biodiversity measurement data.

LERNZdb is designed to accommodate various kinds of freshwater quality and biodiversity measurement data, including:

- discrete measurements like nutrients, etc.
- sediment measurements
- water quality profiles like CTD casts, Biofish, etc.
- high frequency measurements
- fish surveys, including length measurements (for electro-fishing and netting)
- macroinvertebrates counts, biomass and size measurements
- phytoplankton counts and biovolume
- zooplankton counts

If you have data from different categories that you would like to be included in LERNZdb, please do not hesitate to email us at lernzdb@waikato.ac.nz.
LERNZdb datasets are uploaded and made available as Excel spreadsheets.

All data in LERNZdb has a Creative Commons Attribution licence (see [Attributions 3.0 New Zealand](http://creativecommons.org/licenses/by/3.0/nz/) for more information). This licence allows users to share data openly but still receive credit for it. This is in line with the recommendations from the New Zealand Government Open Access and Licensing framework (NZGOAL) (see [http://ict.govt.nz/assets/Uploads/Documents/NZGOAL.pdf](http://ict.govt.nz/assets/Uploads/Documents/NZGOAL.pdf)). In addition, it is possible to restrict the data from public access for up to a year in order to allow for publication of the results.

2.2 Our philosophy

The LERNZ goal is to “Link lake restoration research with end users to achieve outcomes”. Data plays an important role in that goal, and as part of this it is paramount that freshwater and biodiversity data collected for the LERNZ programme or elsewhere is safely stored and publicly available. The data can therefore be used to inform future research discussions, identify problems and inform policy decisions.

Following Maslow’s hierarchy of needs, a hierarchy for research data can be established and LERNZdb fully supports all levels of this hierarchy.

![Hierarchy of needs](image)

Storing data in LERNZdb and making it available to the public can therefore satisfy an institution’s or an individual’s data management needs and will potentially enable them to reap benefits from sharing their data.

LERNZdb is an implementation of a modern vision of Science that is built on collaboration and shares both results and data freely and openly. At the same time we are also addressing the threat of losing valuable research data when staff members or research students leave an institution. As Prof Carnaby from Lincoln University puts it: “To me the lack of a clear policy for eResearch is currently the biggest threat to the NZ science system since the unacceptable loss of unique research and data experienced when the DSIR was restructured in the 1980s. This must never happen again” (Prof Penny Carnaby at [eResearch2020](https://www.lincoln.ac.nz/eresearch2020)).
2.3 Some background on submitting data

LERNZdb allows LERNZ researchers, staff and students from universities, government employees and other individuals to submit datasets. Following a review process to ensure quality and consistency and an optional embargo period, datasets are made publicly available. Each dataset in LERNZdb is assigned a unique persistent identifier to facilitate citation of the dataset in academic publications. End-users of LERNZdb can find datasets using a range of criteria.

The LERNZdb submission process strikes a balance between two factors. On the one hand, submission needs to be as fast and uncomplicated as possible to encourage widespread uptake of LERNZdb. On the other hand, all measurements need to be accompanied with sufficient quality assurance and provenance information to allow meaningful re-use and scientific scrutiny.

Data is submitted via Excel spreadsheets and prepared in several, intuitive steps:

- the submitter describes their dataset by choosing values from predefined vocabularies: What type of data? What (type-dependent) attributes are present? This also defines quality assurance information desirable for the data points in the dataset.

- LERNZdb generates a spreadsheet with columns for measurement values, variable, unit, quality assurance information and other identifying information such as the waterbody identifier, geo-coordinates of measurement site and timestamp.

- the submitter downloads the spreadsheet, pastes in their data and uploads the completed spreadsheet to LERNZdb, along with any raw data files they would like to store in LERNZdb.

- LERNZdb checks the completed spreadsheet for presence of data and compliance with the column format. All information for which we have a controlled vocabulary is cross-checked against the vocabulary; if any discrepancies are found, the submitter is informed and given a chance to revise their spreadsheet.

A specific point of difference to other, similar repositories is the inclusion of quality assurance information that clearly describes how the data were collected and pre-processed. This step enables data users to conduct research in an accountable, reproducible manner. Collectively, these steps will ensure that the vast quantities of environmental data collected by LERNZ and other research groups will be clearly formatted, with appropriate metadata, and available for use by current and future researchers.
3. Assembling and submitting data

3.1 Registering for an account

If you don’t have a LERNZdb account, you need to register at http://lernzdb.its.waikato.ac.nz by clicking on the ‘Register’ link under ‘My Account’ on the left hand side of the screen.

You will be able to choose an email address as username and your password. This email address will be your username and will also be used by LERNZdb to communicate with you.

You will receive a verification email with a link to verify your email address. Once you click on that link, your registration will be complete. However, one further step is required to be able to submit data. You just have to follow the instructions in the verification email: Send an email to lernzdb@waikato.ac.nz with the following two details:

1.) the email address you used to register, and

2.) the supplier you want to submit data on behalf of. For a list of suppliers, visit http://lernzdb.its.waikato.ac.nz/community-list

We might have to check with the supplier to determine whether you are authorised to submit data into their collection. Once that is done, you will receive an email from us. From now on you are able to submit data to LERNZdb using your username and password.
3.2 Start the submission process

If you have an account for LERNZdb that is enabled for submission, you need to log in providing your username and password. The ‘Login’ link is in the left-hand side menu under ‘My Account’. If you do not have an account, then go to section 3.1 and learn how to register. If you have an account, but it is not enabled for submission, please contact lernzdb@waikato.ac.nz

If you have forgotten your password, please use the ‘Forgot your password’ function.

3.3 The actual submission process

Once you are logged in, click on the Submissions link on the left-hand side menu to start a new or continue with an existing submission.
All data in LERNZdb have to be submitted from a supplier. You chose your default supplier when you registered. If you are able to supply data for several suppliers, then as a first step, the system will ask you to select a supplier from a list. Otherwise, as you are linked to just one default supplier anyway, the system will automatically use your default supplier and skip this step.

The submission process consists of six steps. At any point during the submission, you can go back to a previous step or save your submission and re-start at a later time. Each successfully completed submission will be reviewed by a domain expert at LERNZdb. They make the final decision whether your submission for LERNZdb will be accepted and made public.

During submission, we will rate the quality of your submission on a scale from zero to three stars. This rating allows users to get a quick estimate of the quality of the data.

**Step 1: General description**

In the first submission step, please provide some general information on your dataset like title and a description. Also mention anyone involved in gathering the data and putting it together as a dataset, basically anyone you want and have to give credit for creating this dataset. They will be listed as authors of the dataset in LERNZdb and their
name will appear as authors in the citation once the item is live. Please add the authors/creators one after another using the ‘Add’ button.

Optionally, you can also provide one or multiple citations of existing publications that already use the dataset you are going to submit.

**Step 2: Temporarily suppress your dataset from public access (optional)**

In the next step, you have the option to withhold a dataset from being made publicly available for up to a year. This step is optional. If you wish your dataset to be available immediately after submission and review, then skip this step by pressing the ‘Next’ button on the bottom of the page.

The idea behind a temporary suppression is to allow time to write an academic publication with the data before making it available to the public. As our philosophy is to share and re-use data, we are not a data backup facility and thus, do not allow suppressions of more than a year. A reviewer will check whether your suppression period does not exceed a year. We reserve the right to reject a submission if the suppression period exceeds 12 months.

Below, you will find an example screen, please specify a date until which your dataset will be suppressed from public access. Valid date formats are yyyy, yyyy-mm and yyyy-mm-dd, for example 2015, 2015-06, 2015-06-28. It is optional but recommended to provide a reason.
Please note that the suppression will lift automatically after its end date. Your data will be publicly available after expiry of your suppression period without LERNZdb giving any explicit notice to you. Therefore choose your expiry date carefully. Remember it can’t exceed 12 months.

Public access

By default all datasets will be made public immediately after a successful review process. However, LERNZdb offers to suppress your dataset temporarily from public access (embargo) e.g. to allow for publication. If you want to do so, please enter a date below, otherwise just press the 'Next' button. Temporary suppressions are lifted automatically on their expiry date.

Temporary suppression from public access (optional)

**Suppressed until specific date:**
Only provide a date if you want your dataset to be suppressed temporarily from public access (embargo) e.g. to allow for publications of your results, otherwise leave the field empty. If you wish to apply a temporary suppression to your dataset, please provide the first day from which access is allowed. Public access will be given automatically on that date. Accepted format: yyyy, yyyy-mm, yyyy-mm-dd

**Reason:**
The reason for the temporary suppression, typically for internal use only. Optional.

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**Step 3: Create template**

LERNZdb is a repository for your data and not a database. Amongst other things, this means your data get uploaded and presented to the users of the system as datasets and not as individual data points. You as the submitter have some freedom of how to put your data together as datasets, however, some things are prescribed by LERNZdb. There are various reasons why LERNZdb limits some degree of freedom. The most important reasons are:

- the need for common wording when it comes to variables, species/taxa and other descriptors.
- different quality control mechanisms and requirements for different types of water quality data.
- different type of water systems like rivers and lakes that are identified differently.

In this step you will create an Excel template that allows you to fill in your data. Firstly, you will have to choose the type of your water system. Secondly, you choose one category for...
your data. If you want to upload data for different categories, you will have to split up your data into different categories and submit each set separately. The same goes for the water system, you can only submit either lake, river or wetland data. You shouldn’t combine it in one dataset. LERNZdb won’t stop you from mixing categories and/or water types. However, the inbuilt rating system will down rate your submission. The categories are:

- discrete measurements like nutrients, etc.
- sediment measurements
- water quality profiles like CTD casts, Biofish, etc.
- high frequency measurements
- phytoplankton biovolume
- phytoplankton counts
- macroinvertebrates counts
- macroinvertebrates biomass
- macroinvertebrates size measurements
- phytoplankton counts and biovolume
- zooplankton counts
- fish electro-fishing surveys
- fish netting surveys
- fish length measurements

To select a variable either double click on it or drag and move it with your mouse.
For some of the categories, you might have to choose species/taxa as well.

Although the categories fish netting/electrofishing measurements and macroinvertebrates size measurements deal with species/taxa, you do not have to choose any species/taxa at this stage. For these categories, you will have to provide the species name for each individual row/measurements in the data.

**Step 4: Upload your dataset**

The next step allows you to download your Excel template and once you have filled in all the data to re-upload it into the system. Optionally, you can upload any other accompanying data (including for example the original version of your dataset). Your accompanying, raw data will be made available to users in the same way and under the same licence than your main data file.

When filling in your template, please provide as much information as possible, but you do not need to fill in information to all cells. A template consists of either two or three sheets: a cover sheet, a data and an optional species/taxa sheet depending on the category of your data. Please ensure that all information on the cover sheet is consistent with the information on the data sheet. There are comments in the
template that should guide you when filling it out. For questions, please contact lernzdb@waikato.ac.nz.

Your submission will be rated on upload according to LERNZdb’s rating criteria. This results in a score between zero and three stars. The rating allows users interested in downloading your dataset to get a quick overview of its quality. Our rating criteria are:

- all potential data points have a value.
- all variables belong to the chosen category and are known to LERNZdb (if you have a new variable, contact LERNZdb prior to submitting your dataset).
- the timestamp information is complete.
- the geo-coordinate information is complete, in WSG84 decimal points and all coordinates are in NZ.
- all data points have a unit (we additionally check to a lesser degree whether the unit is our preferred unit).
- for lakes only: whether we can recognise the waterbody (we can look up its FENZ ID when the lake name and region are unique).
- the amount of quality control information provided (if the category requires quality control information).

There are two different types of templates that depend on your category: Line templates and matrix templates. The categories “discrete measurements” and “sediments” use line templates; all other templates are matrix based.
Matrix templates

The cover sheet of a matrix template contains information about the waterbody, a list of variables, their units and associated quality control information, and optionally depending on the category a list of species/taxa. Not all categories require quality control information.

You should provide as much quality control information per variable as possible as your rating will depend on it. If you have additional quality control information for your variables, please just add an additional column to the spreadsheet. This will greatly enhance the re-use possibilities of your data. Unfortunately, we are not able to take non-standard quality control information into account when rating your dataset.

You can use any unit for measuring your variable, but using a non-preferred unit will have a negative impact on your rating.

The Notes field allows you to provide as much additional, free-text information as needed to explain your data and make it a valuable resource.

Make sure before submitting that the information on your cover sheet is consistent with your data sheet.

The data sheet contains your data points, information on the site including its geo-coordinates in WGS84 decimal points, depth information and a timestamp. If your data contain species/taxa, please use their abbreviation as suggested on the cover sheet or species/taxa sheet.

Your dataset will be down-rated if you do not provide geo-coordinates in WGS84 decimal points format. When it comes to timestamps there are three possible
columns: date, time, date and time. Choose the one or a combination of the three that fit your data. Please use the common NZ format for dates: dd/mm/yyyy

In case your data contain species/taxa, there will be an additional species/taxa sheet, which lists all species/taxa known to LERNZdb. If your species/taxa is not known to LERNZdb, please send an email to lernzdb@waikato.ac.nz and ask for its inclusion prior to finishing the submission process.

**Line templates**

Line templates differ from matrix templates in that they only have a list of variables and their preferred unit on the cover sheet. All other information is provided on the data sheet. This means that the waterbody, site, time and quality control information (if necessary) is provided separately for each data point.

**Step 5: Reviewing your submission**

In this step you can review your submission. This is a very important step as it allows you to make sure that the information you provided is correct.

On top of the page you will see general information like the title and description of your submission. You can change any of the information using the ‘Correct one of these’ buttons.

This section is followed by information on a temporary suppression from public access.

**Public access**

**Temporary suppression from public access:**
The dataset will be suppressed from public access until 14/06/2015. The suppression will be cancelled automatically on that date and your dataset will be publicly available from that date onwards.

Correct one of these

The next provides all the information that we could extract from your dataset including the preliminary rating (LERNZdb reviewers can change the rating). It is essential that you check this information carefully. The section will look like this:
Summary:
There are 25 datapoints out of 28 potential datapoints.
This dataset is concerned with lake.
The category is: Fish electro-fishing surveys.
The preliminary overall LERNZdb quality rating for your dataset is: ★★★

Recommendations to improve the rating:
To get to ★★★★★:
- Add the missing datapoints.

To get to ★★★★:
- Check your bodies of water so that all of them can be recognised by LERNZdb.

Details:
Known variables in category Fish electro-fishing surveys:
- Area Fished - EFAR (found 2 times)
- EF pulse rate - EFPu (found 2 times)
- Time fished - EFTI (found 2 times)
- EF current - EFCu (found 2 times)
- EF Range - EFRA (found 2 times)
- EF % range - EFPR (found 2 times)
- Black Disc - DskBlk (found 1 time)
- Distance fished - EFDi (found 2 times)
- Water Temperature - TmpWtr (found 2 times)
- Specific Conductance - ConSp (found 2 times)
- Fish Species Counts - Fish Species Counts (found 6 times)

Timestamps:
- Timestamps for 28 (potential) datapoints recognised.
- Earliest point in time recorded: Wed Apr 27 10:28:00 NZST 2011
- Latest point in time recorded: Thu Apr 28 22:45:00 NZST 2011

Bodies of water unknown to LERNZdb
- Name: Lake Panorama Region: Auckland (unknown or multiple bodies of water fit name/region) (found for 28 (potential) datapoints)

Geographic Coordinates:
- Sites with complete geographic coordinate information recognised for 28 (potential) datapoints.

Units:
- EFAR: m^2
- EFPu: Hz
- EFTI: min
- EFCu: A
- EFRA: <unit-less>
- EFPR: %
- DskBlk: m
- EFDi: m
- TmpWtr: dagC
- ConSp: uS/cm
- Fish Species Counts: <unit-less>

Known species in category Fish electro-fishing surveys:
- Shortfin eel (Anguilla australis) - ang.aus (found for 22 (potential) datapoints)
- Tench (Tinca tinca) - tin.tin (found for 22 (potential) datapoints)
- Perch (Perca fluviatilis) - per.flu (found for 22 (potential) datapoints)

Standard quality control information for category Fish electro-fishing surveys:
- None required.
**Step 6: Submitter licence Step**

In the final step you need to accept the LERNZdb submitter licence. It allows us to make your dataset available under a [Creative Commons Attribution 3.0 New Zealand](https://creativecommons.org/licenses/by/3.0/nz/) licence after an optional temporary suppression period and also ensures that we have the necessary rights to look after your data in terms of backup, curation, etc. You also acknowledge that you have the rights to submit these data and give the above rights to us.

Once you have agreed to the licence, the submission is complete. It will now be reviewed by a LERNZdb reviewer. You will receive an email that either informs you that your submission has been successful or a reason why we could not include your submission into LERNZdb. Your dataset won’t be deleted if it is rejected. You can adjust your submission according to your feedback and re-submit.

The submitter licence states:

*The administrators of the Lake Ecosystem Restoration New Zealand Freshwater Database (LERNZdb) need permission to store, copy and manipulate files in the repository to ensure their availability.*

*This licence is your permission to them to do this, confirms you have the right to submit your data, and signifies your acceptance of its future use by others in whole or in part. By submitting your data you agree that;*

1) you grant the University of Waikato an irrevocable, non-exclusive licence to store the dataset and related material, and to make it available in whole, in part, or with other data stored in the database, under a Creative Commons Attribution New Zealand Licence (version 3.0 or newer). Should the dataset be embargoed it will only be available on expiry of the embargo.

2) you are either the creator or author of the dataset, or have permission of the creator(s) or author(s) to submit the material, submission of which does not infringe the owner’s copyright. You indemnify the University of Waikato against all liabilities, costs (including full costs between solicitor and client), losses, claims or demands incurred by the University arising out of or incidental to your submission of the material.
3) The University of Waikato will not be liable for any loss or damage whatsoever to you including any indirect, special, incidental or consequential damages arising from third party use of the material you submit.
4. **Reviewing data**

Once you are logged in, click on the Submissions link in the left hand side menu to start a new or continue with an existing review.

All submissions end up in a pool where they are waiting to be reviewed. The first step for a reviewer is to choose the submission that they want to review from the pool. By choosing the submission, it gets transferred from the pool into their own task queue and they are then solely responsible for the review. A decision of a reviewer is final. At any point, the reviewer can decide to give the task back to the pool.

Reviewers can see system-generated information on the submission that will guide them to come to the ultimate decision of whether to accept or reject that submission. They also have access to all files that have been uploaded during the submission process. In addition, they can change the system-generated rating and edit some basic information on the submission, like its title and abstract, and check whether an optional embargo period is no longer than 12 months. A reviewer has the ability to change the embargo date. However, they will only change the date with written consent from the submitter. If the embargo date exceeds 12 months, the submission will be rejected and submitter will be asked to re-submit with a conforming embargo period. The same goes for title, authors or abstract of a submission. The reviewer can change those; this is handy for correcting typographical errors but content should only...
be changed with written consent of the submitter. Alternatively, the submission can be rejected and the submitter kindly asked to change the content and to re-submit.

When a reviewer rejects a submission, it will go back to the person who uploaded it and give them a chance to incorporate the reviewer’s feedback and re-submit or to remove the submission from the system. The reviewer cannot remove a submission from the system, they can only accept it or hand it back to the submitter who has to decide whether to re-submit or remove it.

**The overview screen**

After a reviewer has clicked on the Submission link on the left-hand side menu, they will see a screen like the following one:

### Submissions & workflow tasks

#### Submissions

You may [start a new submission](#) The submission process includes describing the dataset and uploading the file(s) comprising it. Each organisation or supplier may set their own submission policy.

#### Archived Submissions

These are your completed submissions which have been accepted into the water quality database.

<table>
<thead>
<tr>
<th>Date accepted</th>
<th>Title</th>
<th>Collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013-11-21</td>
<td>Kotuku_Biorecviews_December 2011</td>
<td>Ecolab</td>
</tr>
</tbody>
</table>

#### Workflow tasks

These tasks are datasets that are awaiting approval before they are added to LERNZdb. There are two task queues, one for tasks which you have chosen to accept and another for tasks which have not been taken by anyone yet.

<table>
<thead>
<tr>
<th>Task</th>
<th>Dataset</th>
<th>Collection</th>
<th>Submitter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awaiting reviewer’s attention</td>
<td>Waikato River (2002)</td>
<td>lompo</td>
<td>email: lompo.raw</td>
</tr>
<tr>
<td>Awaiting reviewer’s attention</td>
<td>Lake Pukatea (2002)</td>
<td>lompo</td>
<td>email: lompo.raw</td>
</tr>
<tr>
<td>Awaiting reviewer’s attention</td>
<td>Ohinemuri River (2003)</td>
<td>lompo</td>
<td>email: lompo.raw</td>
</tr>
<tr>
<td>Awaiting reviewer’s attention</td>
<td>Lake Wakatipu (2002)</td>
<td>lompo</td>
<td>email: lompo.raw</td>
</tr>
<tr>
<td>Awaiting reviewer’s attention</td>
<td>Maku River (2003)</td>
<td>lompo</td>
<td>email: lompo.raw</td>
</tr>
</tbody>
</table>

All review related tasks are shown under the heading of ‘Workflow tasks’. In LERNZdb the term workflow is used as a synonym for review. The top of the screen with the heading ‘Submissions’ shows the reviewer’s own submissions and is not part of the review process.

In the ‘Workflow tasks’ section there are two tables:
• tasks you own
• tasks in the pool.

The table ‘Tasks in the pool’ contains all submissions that are awaiting to be reviewed but no reviewer has yet taken the task to review them as their own. The table ‘Tasks you own’ also contains submissions that are waiting to be reviewed. However, for these ones, you as the reviewer have chosen the submission to be yours to review. You are solely responsible for this submission now and make the final decision. At any point you can give those tasks back to the pool.

Choosing a submission

There are two ways of choosing a submission to be reviewed by you.

1) you can tick the checkboxes of the submissions you want to review in the ‘Tasks in the pool’ table and click on the ‘Take selected tasks’ button on the bottom of the table. In the same way there is a button at the bottom of the ‘Tasks you own’ table to return a task to the pool. Please note these buttons will only appear on the screen if there is a submission in the respective table.

2) you can click on the ‘Dataset’ link for each submission. This will take you to the main reviewing screen that contains on its top a preview of the item page (what the submission would look like if accepted). It also contains system-generated information that will guide you in your review decision. We will discuss the screen in the next section in more detail. However, on the very bottom of the screen, you will find the following buttons to take the reviewing on as your own or leave it in the pool.

Actions you may perform on this task:

Assign this task to yourself. Take task

Leave this task in the pool for another to take. Leave task

Cancel

The main reviewing screen

When you click on the ‘Dataset’ link in the ‘Tasks you own’ or ‘Tasks in the pool’ table you will get to a screen that contains all the information that you need to make an informed review decision. In addition, on the very bottom of the page there is a set of
buttons with possible actions. If the task is still in the pool, there will be two buttons to take the task or to leave it in the pool (see above). If you have taken the task already, then there will be a set of 5 buttons that correspond to the 5 review actions that are available to a reviewer. First we will have a look at the information on the screen and then at the 5 different review actions.

The top of the screen provides a preview of what the item page will look like once the item is live. In addition it allows a reviewer to actually download the dataset and any additionally uploaded raw files.

Please note, that at this stage the citation does not contain a year. The year will be added once the data are live as it is the year of publication.

Always check on this page that the embargo period does not exceed 12 months.

The ‘Show full dataset record’ button allows a reviewer to see all metadata values for the submission including lernz.provenance which indicates that the rating has been changed. All the information provided below this button won’t be displayed once the item is live and is designed purely to help reviewers in their task of reviewing the submission. It details what the system could read in from the submission. It is the reviewer’s task to determine that what the system could read in is information that
makes sense from a biological perspective (and is not just some list of random characters, for example).

On the very bottom, there are buttons for the review actions. In this case the reviewer does not own the task, it is still in the pool. Thus there are buttons to own the task. Otherwise, there will be 5 buttons which we explain in detail with the next screenshot showing the 5 actions/buttons on the bottom of the main review screen.

**Actions you may perform on this task:**

- **Approve dataset**
  - If you have reviewed the dataset and it is suitable for inclusion in LERNZdb, select "Approve".
- **Reject dataset**
  - If you have reviewed the dataset and found it is not suitable for inclusion in LERNZdb, select "Reject". You will then be asked to enter a message indicating why the dataset is unsuitable, and whether the submitter should change something and resubmit.
- **Change rating**
- **Edit metadata**
- **Return task to pool**

**Action 1: Approve dataset**

When a reviewer clicks on this button, the dataset is deemed suitable for LERNZdb and will be accepted. This is the end of the review process.

**Action 2: Reject dataset**

Submissions that are not suitable can be rejected using this button. When reviewers click on the button, they will be asked to provide a reason. A submission cannot be rejected without a reason. This reason is sent back to the submitter via email.
This is the end of the review process. The submission will disappear from the ‘Tasks you own’ list, however the submission won’t be deleted from the system. It is just passed back to the submitter who can then decide to re-submit the dataset based on the reviewer’s comments or to remove the submission from the system.

**Action 3: Change rating**

A reviewer has the ability to change the system-generated rating. The reviewer is required to provide a reason for the rating change which will be stored in an administrator only metadata field together with the reviewer’s username and the date of the change so that changes to the rating can be monitored.

The screen to change the rating is laid out in the following way:
It lists all the rating criteria that are applicable to the submission. Please note that only rating criteria will be listed that have been applied to the submission as some categories do not use all available rating criteria. For example, submission in categories that do not require any quality control information won’t be rated based on quality control criteria.

For each rating criterion, there are two checkboxes:

- “Actual rating” - the rating that is currently applied to the submission. A tick means that this criterion has been fulfilled.
- “Suggested rating” - the rating that is generated by the system. These checkboxes cannot be ticked/un-ticked by a reviewer. A tick means that the system believes that
this criterion has been fulfilled. However, the system cannot check whether the
criterion has been fulfilled in a meaningful way. For example, the system has no way
of determining whether the provided quality control information actually makes
sense.

Underneath the list of rating criteria, there is a textbox where the reviewer has to
provide a reason for a rating change. The information provided will be logged together
with the reviewer’s username and the date. If the rating has been changed previously,
there will be a log of all changes displayed on the bottom of the page.

In addition, the logged rating change information (reason, username and date) will be
saved as administrator only metadata in a field called lernz.provenance.

As long as the submission is still reviewed, you can check whether the rating has been
changed by either using the ‘Change rating’ button or you can click on the ‘Show full
dataset record’ button in the middle of the main review screen. If you do the latter
check whether there is an entry for lernz.provenance.

Once the item is live, go to the item page and click on the link called ‘Show full dataset
record’ at the very bottom of the item page. This will show you all the metadata fields
for the item including any information in lernz.provenance. Please note, that when
there is no such metadata field then the rating has not been changed. However, keep
in mind that you have to be logged in as an administrator to see this information on
the page as it is hidden from normal users. If you are unsure whether you are logged
in, check on the right top corner of the site and see whether there is your username
and a link to logout (meaning you are logged in) or there is a link to login (meaning you
currently logged out).

**Action 4: Edit metadata**

This can be used to inspect and change the title, authors, abstract and embargo period
of a submission. Apart from typographical errors, changes should be made with care.
We advise rejecting the submission and providing feedback, especially when there are
issues with the embargo date.

When a reviewer presses this button, they will see the following screen that is
identical to the first submission screen.

It allows a reviewer to change the title, authors and description of a submission. This
can be useful for example if there are typographical errors that can be changed quickly
this way instead of rejecting the submission and the submitter having to re-submit.
For greater editing of content, we recommend rejecting the submission and explaining
the required changes in the feedback.
Please note, anyone listed as author will be credited for the dataset in the ‘Cite as’ box on the item page and on the cover sheet of the Excel file once the submission has been accepted and is live.

Describe Dataset

**Title (required):**
Enter a main title for the dataset.

*test*

**Author(s) (required):**
Enter the names of the dataset creators.

*test, test*

**Dataset description (required):**
Enter a description of the dataset. This will be shown in LERNZDb.

*test*
When you press the ‘Next’ button, you will get to a screen that potentially allows you to edit the embargo date. Use this screen mainly to check whether the embargo period does not exceed 12 months. If there are issue with the embargo, we recommend rejecting the submission and providing some feedback. As embargoes lift automatically on their expiry date without any notification, changing the expiry date without explicit consent might have unwanted side effects.

**Action 5: Return task to pool**

Finally, when a reviewer chooses this button, the task will be returned to the pool and other reviewers will be able to review the submission. If the reviewer has changed the rating or metadata, then these changes will be persistent.
5. **Downloading data**

Each dataset has its own item page in LERNZdb with a unique and persistent identifier. Datasets are stored as Excel files. A submitter might have provided additional (raw) information which will be displayed on the bottom of the page if it is available.

The item page also contains a Google Map with a marker for each site’s location given this information is present in the dataset.

Furthermore, you will find a description of the dataset and information on its metadata and quality rating. The rating ranges from zero to three stars and should give users a quick overview on the quality of the data.

All dataset in LERNZdb are published under a Creative Commons Attribution 3.0 New Zealand licence. If you use the data, you will have to attribute it preferably in the form of the citation that is displayed on each item page, for example:


However, we acknowledge the fact that your publication might require a different format of above citation.
When using the data, please also be aware of our Disclaimer:

In retrieving material stored on this database you agree that you rely on the data at your own risk; the University of Waikato offers no warranty or representation that the data is fit for any particular purpose, or free from defects, and will not be liable for any losses or damages whatsoever including any indirect, special, incidental or consequential damages incurred by you arising out of the use of the database or in reliance on the data retrieved. You agree that data is not of a kind ordinarily supplied for personal or domestic purposes, and that the Consumer Guarantees Act 1993 does not apply.
5.1 Searching for data

There are 4 different ways to find data in LERNZdb.

1. You can use the search box in the top right corner of the screen
2. You can browse the available categories (organisations, lakes, rivers, wetlands, variables and species/taxa)
3. You can use the discovery index. It shows the five most common lakes, rivers, wetlands, variables, species/taxa and timestamps. Click on view more to see others.
4. You can directly navigate to the latest datasets added to LERNZdb on the bottom of the page.

When you use the search box (1) or the discover index (3), you will be able to add additional filters to your query that allow you to narrow your search and get the right results. In addition, the discover index itself on the left hand side of the screen will adapt itself depending on your current search selection.