PeatDataHub

Combining global peatland datasets

EYES ON THE BOG

IUCN National Committee United Kingdom Peatland Programme

PEATDATAHUB

Manual for Database navigation and upload

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water @leeds

UNIVERSITY OF LEEDS

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Contents

Database Structure

PeatDataHub is designed to hold information on peatland sites, wells associated with peatland sites and surveys from wells. The database also includes functionality for the Eyes on the Bog Long-term Monitoring network protocols.

Types of Data for upload:

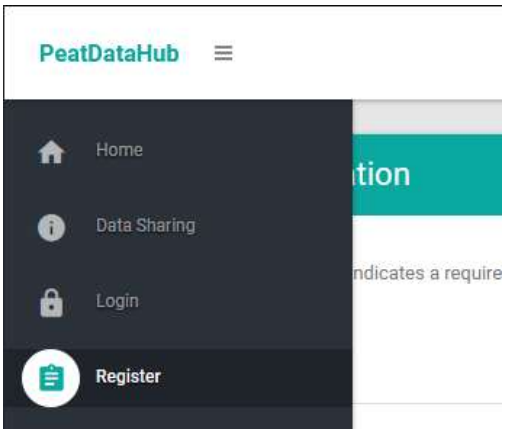
- **Peatland sites** (metadata about the overall peatland). You can also view and access any wells, survey data, uploaded files, and pictures held about the site. Currently only people with admin rights can add new sites. Everyone can view the metadata for peatland sites.
- **Eyes on the Bog (EoB) sites**
    - Rust rods
    - Surface level markers
- **Wells** (metadata about a specific well). You can also view details of the surveys and other files held in relation to the well.
- **Surveys** (overview of surveys held in relation to a well). You can access the water table data held for each well you own.
  You can also view details of the surveys and other files held in relation to the monitoring site.
- **Supplementary Data**. Additional files can be added at the Site or Well level, to include information such as papers, or maps of the field site.
- **Photos** can be added at the Site or Well level, in aspect ratios including 360°.

Registration

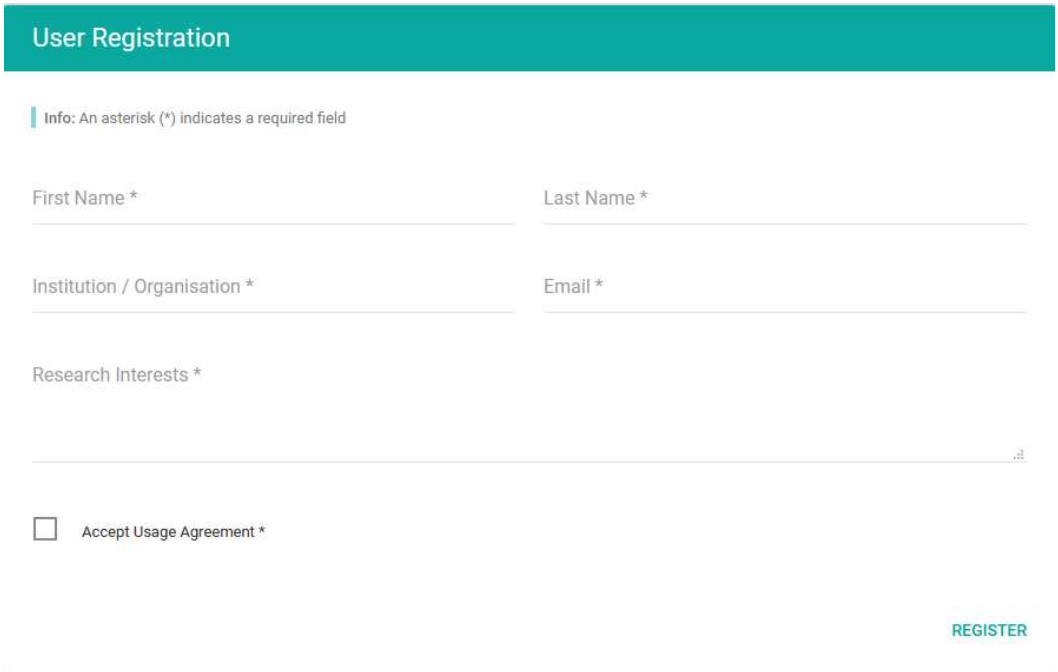
The application can be accessed at https://secure.peatdatahub.net/.

The registration process ( )is as follows:

1. Select the 'Register' button from the navigation strip on the left-hand side of the page,



2. Then Input your personal information, including your institution.



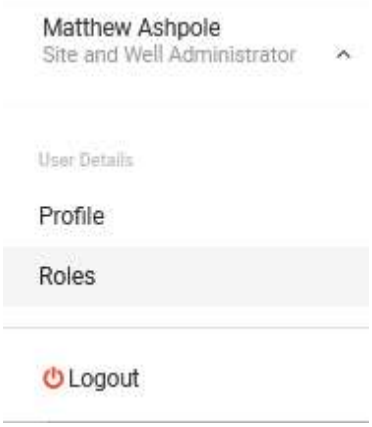
Registration screen.

3. Your registration will be processed, and instructions will be sent to your inputted email regarding how to log on.

User roles

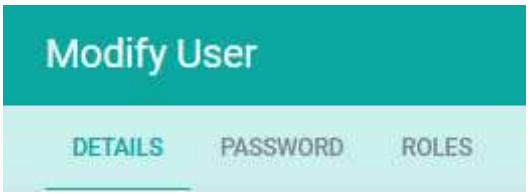
These roles ( ) define the ability you will have to upload data across the website. Please take note of your roles by:

1. Selecting your username in the top right-hand corner,
2. Then navigating to ‘Roles’.



Accessing your account roles.

Here, you can also edit your password and personal details, using the other tabs available:

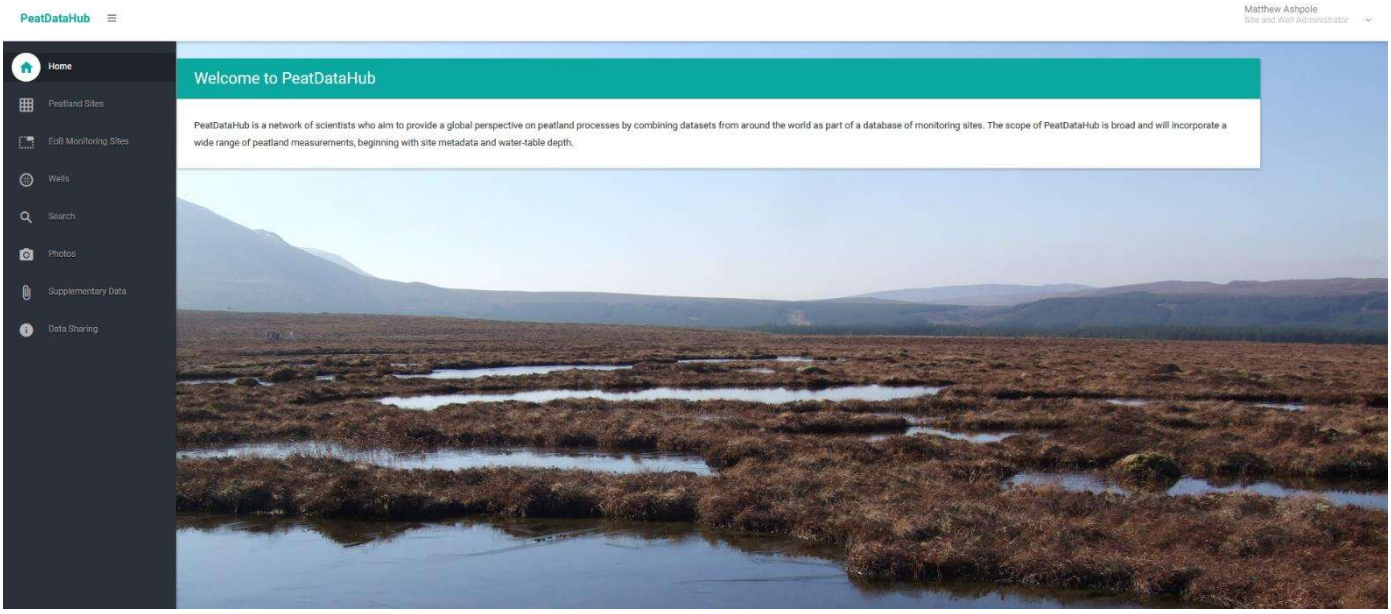


Data upload and management

Welcome Page

Once logged in, the PeatDataHub main screen ( ) will be displayed. The Menu options will be displayed on the left. The menu options are:

- Home
- Peatland Sites- List of peatland sites recorded in Peat Data Hub
- EoB monitoring sites
- Wells - List of wells that you have access to
- Search - Functionality to search for sites
- Photos -List of photos associated that you have access to
- Supplementary data- List of files that you have access to
- Data Sharing



PeatDataHub welcome screen.

Data Sharing Protocol

Information regarding Data Sharing Protocols is available at the following link: https://peatdatahub.net/data-sharing/. Please take care to look over this information to understand how your data is protected within PeatDataHub.

Information Flow

Information needs to be added in the following order:

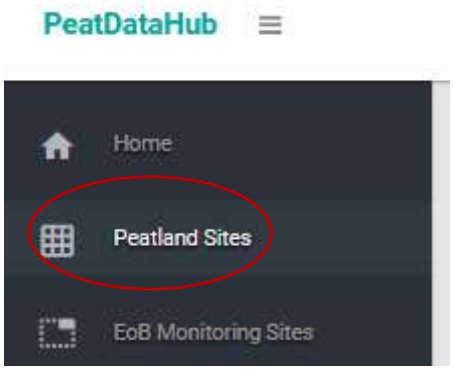
1. Peatland sites need to be added first.
2. Once a Peatland site is added wells and EoB monitoring sites can be added to the Site. Wells can be added by Managers & Admins.
3. After adding a Well, surveys / measurements can be added to wells. Surveys can be added by Managers & Admins.
4. Photos and supplementary data can be added to Sites and Wells at will after the Site/Well is created.

Functionality

Peatland Sites

Selecting the Peatland Sites Icon will display the Peatland Sites Screen. This screen displays:

- Site ID (Numbering of sites by upload date)
- Site Identifier (Unique shorthand identifier for site)
- Site Name (Longform site name)
- Country
- Continent

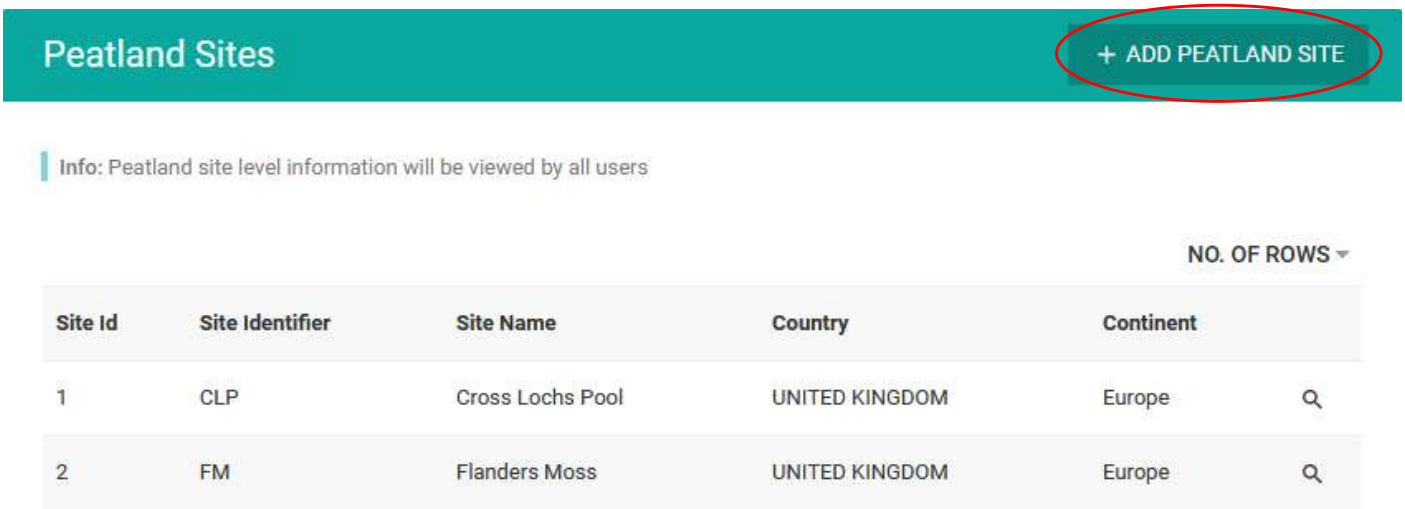


Peatland Sites page.

Adding Sites

To add a new peatland site (), you need to:

1. Select the 'Peatland Sites' tab in the main menu
2. Select the '+Add Peatland Site' icon in the top right



3. You can then enter the following information:

Category	Item	Definition
Geographic	Site Identifier*	Unique Site ID.
	Site Name*	Longform Site Name.
	Country*	Country of Site.
	Latitude*	Decimal Degree. Centre of Site.
	Longitude*	Decimal Degree. Centre of Site.
	Max Elevation	m a.s.l. at highest point, or average.
Climate	Mean Annual Precipitation	(mm).
	Mean Annual Temperature	(^{o}C).
Peatland	Peatland Type*	Dominant Peatland Type.
	Dominant Condition Type*	Dominant Peatland Condition.
	Trophic Status	Dominant Trophic Status.
	Size of Peatland (km^2)	Landscape scale.
	Max Peat Depth (m)	Max Peat Depth recorded at the site.
	Mean Peat Depth (m)	Mean Peat Depth recorded at the site.
	Substrate material	Dominant Peat substrate (Geology).
Inventory	Vegetation Type	Dominant Vegetation Type.
	Land Use Type	Dominant Land Use (if any).
Admin	Contact Organisation	Organisation of Data Owner.
	Contact Name	Full name of Data Owner.
	Contact Email	Email of Data Owner.
	Contact Phone	Phone number of Data Owner.
Comments		Space for supplementary comments (e.g. “Location taken from centre of site”.

Note: Once a site has been added, a well can be added from the well tab, surveys cannot be added until a well has been added. Wells, Surveys, Files, and Photos stored for a site can be view from here.

Sorting

The Sites page will display all sites uploaded to PeatDataHub. Clicking each header will sort the results alphabetically or numerically, according to that header.

Site Id	Site Identifier	Site Name	Country	Continent	
1	CLP	Cross Lochs Pool	UNITED KINGDOM	Europe	
2	FM	Flanders Moss	UNITED KINGDOM	Europe	

Metadata

Select the View Peatland Site icon (Magnifying glass) to view metadata.

Wells

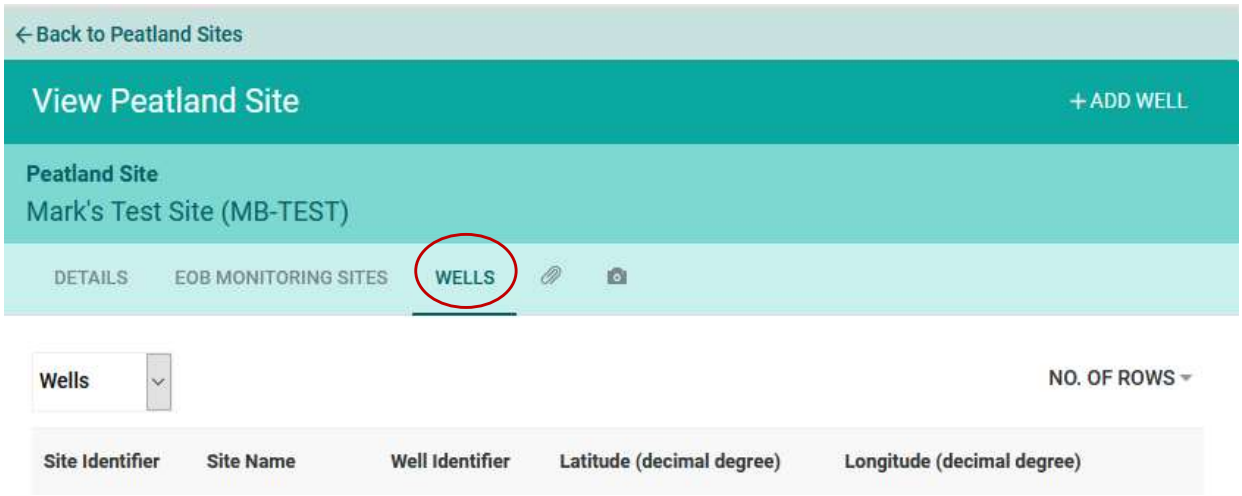
Adding Wells

To add a new well ( ), you need to:

1. Go to the 'Peatland Sites' screen and click on the 'View Peatland Site' icon.

Note: You will need 'Well administrator' rights to add a well.

2. In the 'View Peatland Sites' screen, click on the Wells Tab. This will take you to the Wells Screen.



The 'Wells' screen will display all the wells you have access to.

3. To add a new well, click on the '+ADD WELL' button in the top right.
4. You can then input the information in the table below:

Item	Definition
Well identifier*	Unique shorthand identifier.
Well Diameter (cm)*	Diameter of well hole.
Fixed to Datum Post	Is the Well tethered to a fixed-elevation datum post?

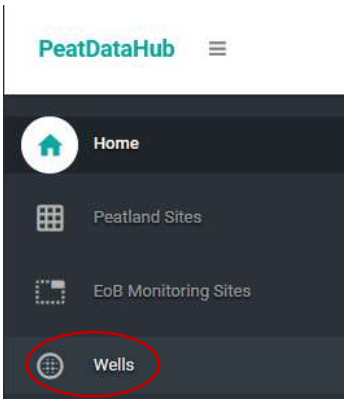
Is well lined?	Does the well have perforations?
Line Tube Perforation type (Displayed when ticking “Is well lined? “)	How is the well measurement tube perforated?
Line Tube Installation type Displayed when ticking “Is well lined? “	By which means was the tube installed?
Line Tube details (material, dimensions & set-up) Displayed when ticking “Is well lined? “	Optional details regarding well tube type.
Has Response Time Test?	
Response test details Displayed when ticking “Has Response time test “	
Can response time test be done?	
Is well surveyed?	Has well data collection been undertaken?
Well observation details Displayed when ticking “Is well surveyed? “	Details regarding the well and its surroundings. Please include noteworthy geographical features that may impact expectations of Peat processes.
Is peat surface surveyed?	Has an observation of the peat surface been completed?
Peat observation details Displayed when ticking “Is peat surface surveyed? “	Details of the Peat surface observation if undertaken.

Latitude (decimal degree) *	Latitude using Decimal system. The 'Target' symbol can be used to convert other coordinate systems to Decimal Degree via gridreferencefinder.com. Use site location if well location absent.
Longitude (decimal degree) *	
Start Date	Date monitoring began.
End Date	Date monitoring ceased (leave blank if current).
Peat Depth (m) *	Depth of peat at well location.
Peat Base (Substrate Material	Dominant Peat substrate (Geology).
Vegetation Description	Description of Dominant Vegetation.
Land Use Type*	Dominant land use at the site (if any).
Recording Method*	Method used for recording (logger or manual).
Regular checks carried out? Displayed when selecting "Manual" recording method.	Are checks carried out at regular intervals, or one-off site visits?
Logger Details Displayed when selecting "Logger" recording method.	Further information regarding the logger brand and model, dimensions and accuracy.

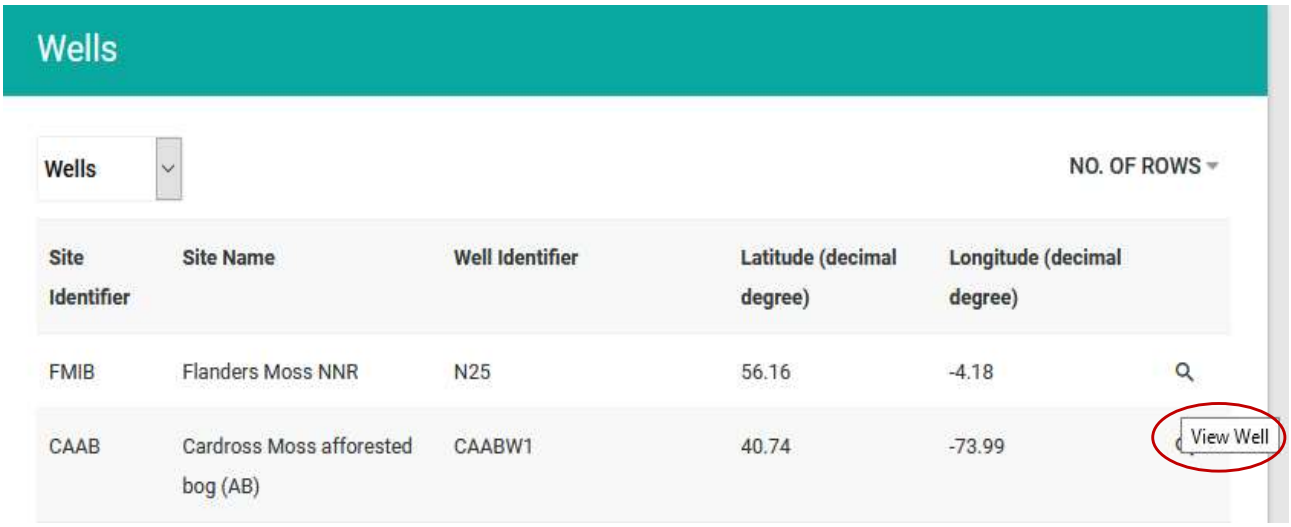
Viewing / Editing Well information

Well Information can be accessed from the 'Peatland sites' screen or from the 'Wells' icon in the main menu.

Note: Users will need "Well Edit" permissions.



1. From the wells screen, click on the 'View Well' button (magnifying glass).



2. The 'View Well' screen will display the metadata for the well in the Details tab. You can also access Surveys, Data Files, and Photos, by clicking on the tabs. If you have edit rights to the well, you can edit the details and add Well Data, Supplementary data files and Photos, and share the well information with other users.

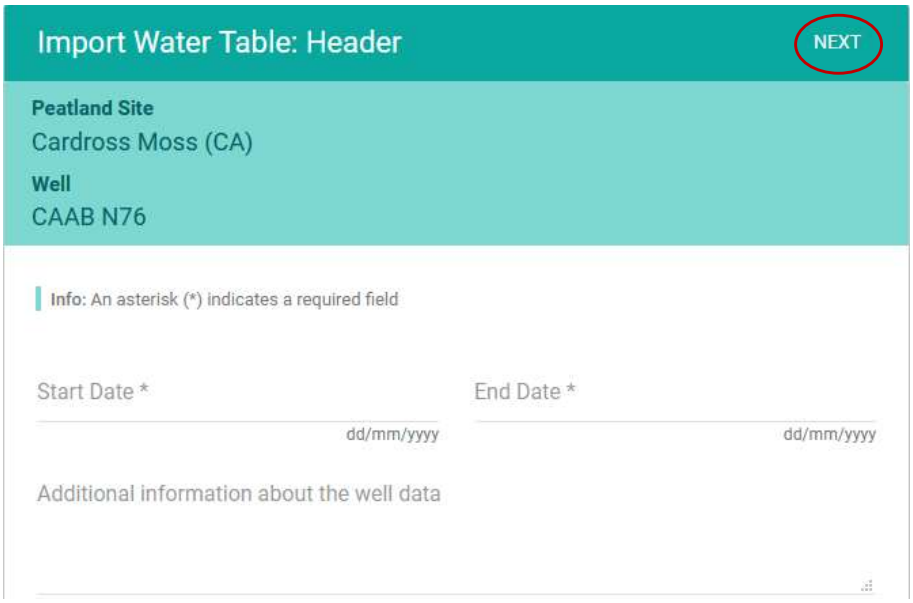
Uploading Survey Data

1. From the "View Well" Screen, click on the 'Well Data' tab and go to the well data screen. Survey data should be in an Excel (.xlsx) file or .CSV, and the data file may include:
    a. Date (dd/mm/yyyy) *
    b. Time (hh:mm)
    c. Water-depth (cm, two decimal places) *
    d. Water Temperature (°C)

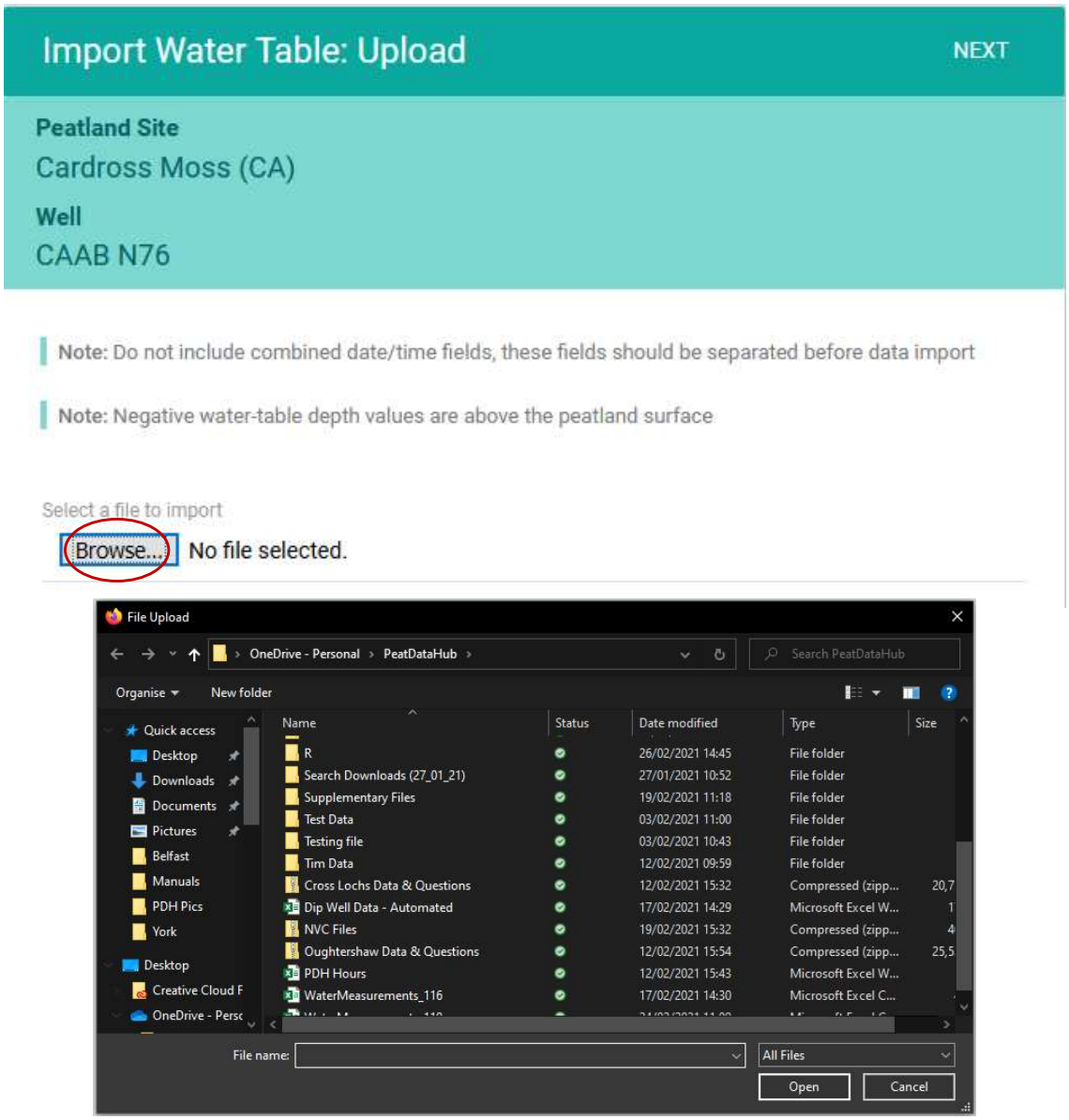
2. To add a survey ( ), click on the "ADD WELL DATA" button to start the upload wizard.

3. In the "Import Water Table: Header" screen, the required (*) information must be entered.

4. After entering all the information required, click Next.



5. From the next screen, you will need to select the file to upload. Select the “Browse…” button to open the file explorer, allowing file selection.

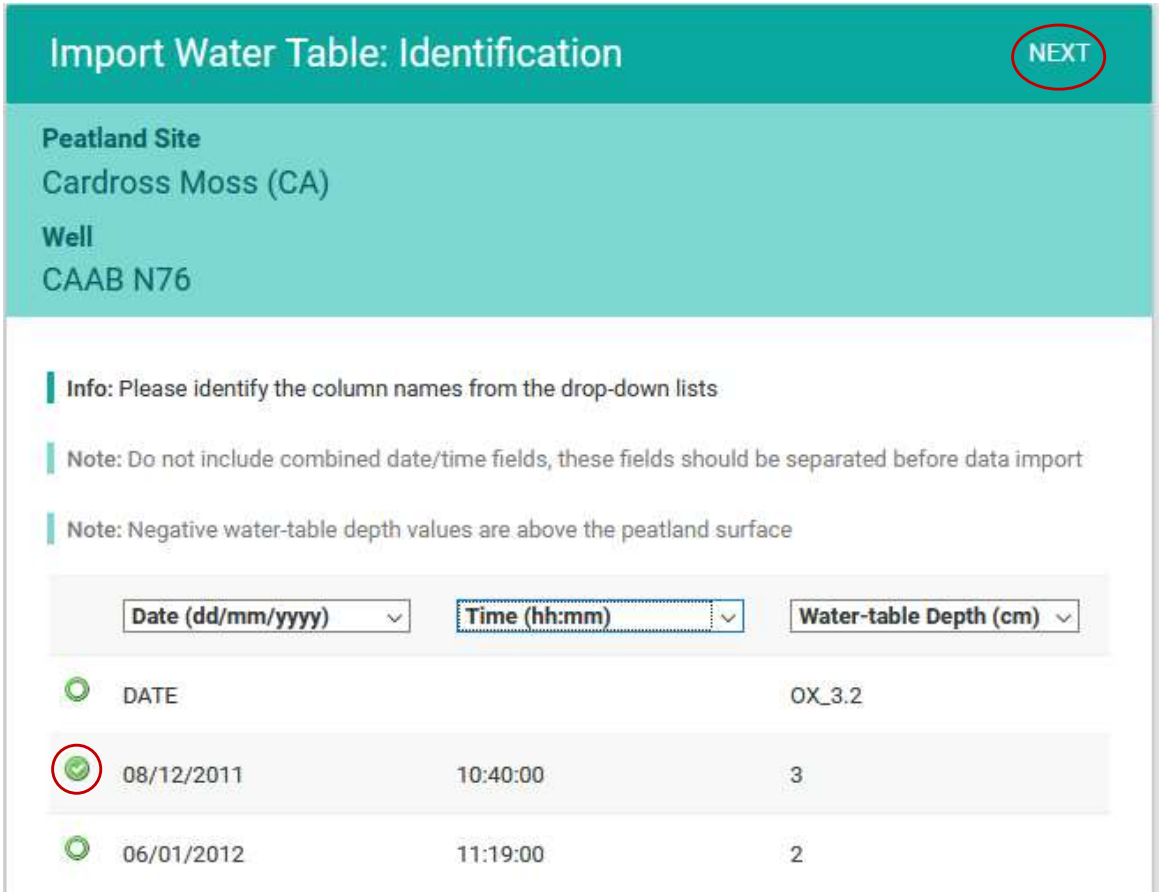


6. The name of the file selected will appear next to the “Browse…” button. Click ‘Next’ to continue.

7. In the next screen, you will have the option to select the worksheet to upload.

8. Select the first row with data (**not the headers**) to indicate the start of what is to be uploaded.

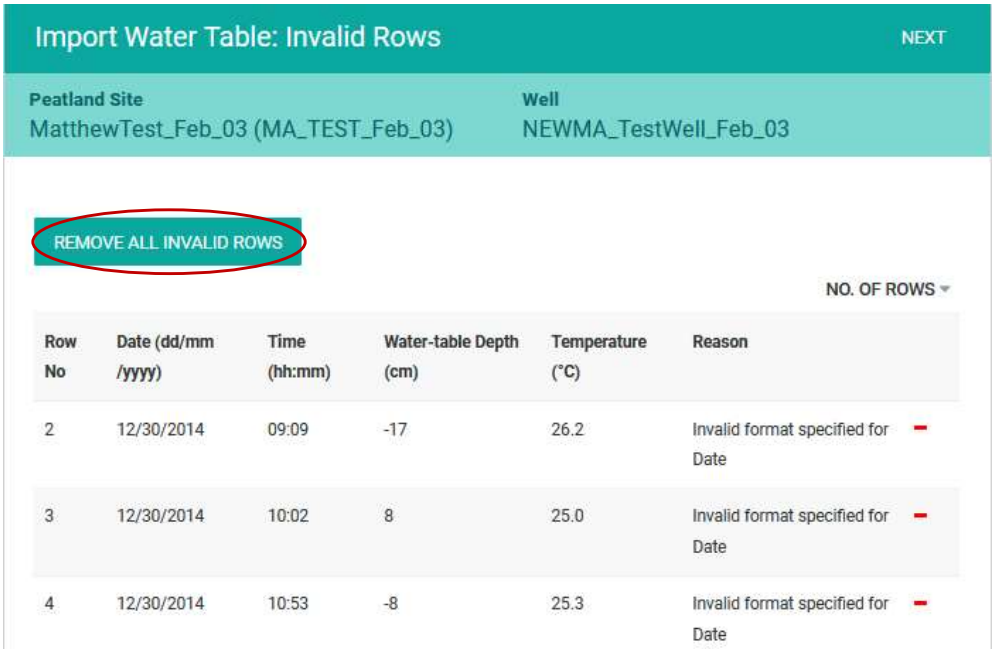
9. The upload wizard will try to match the headers from your file against the headers of the database (Date (dd/mm/yyyy), Time (hh:mm), Temperature (°C), Water-Table Depth (cm)). If the header names don't match exactly the database headers, no headers will be selected. You have the option to manually select/deselect headers.



10. Once you have selected all the headers required, click 'Next'.

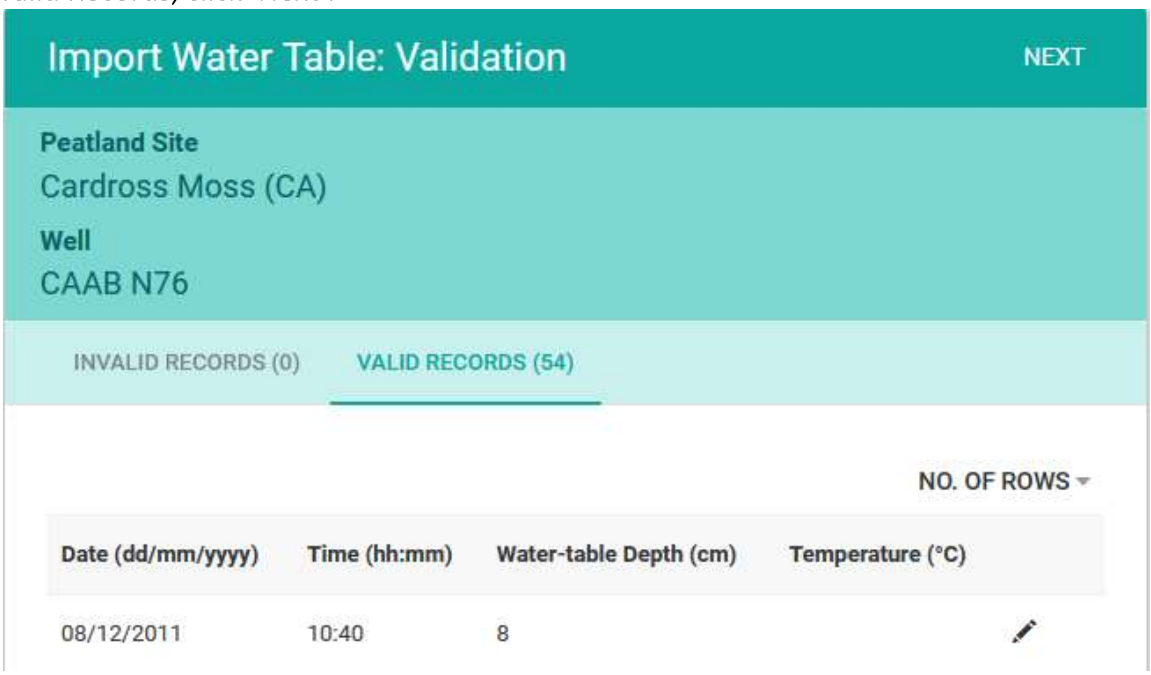
11. The Upload wizard will review the data and will produce a summary of invalid data if there is any present. **Invalid data includes**:
    a. Dates that are in a format different to 'dd/mm/yyyy'
    b. Cells with symbols. If a value wasn't recorded, the cell must be empty.

12. You have the option to remove all the rows with invalid data, or you can stop the upload process, review your file, and upload again.



13. If invalid data needs to be removed, click on the "Remove All Invalid Rows" button. The Upload wizard will remove the invalid data and no values will be displayed in the "Invalid Rows" screen. **Note** here the data is invalid as the date is in mm/dd/yyyy format.

14. The "Valid" screen will open, displaying the tabs with invalid and valid records. If there are no Invalid Records, click 'Next'.



15. The Finish Screen will display a summary of the records imported.


Import Water Table: Finish
FINISH
Peatland Site
Cardross Moss (CA)
Well
CAAB N76
Success: All records successfully imported
No. of Rows Processed: 54
No. of Records Imported: 54
No. of Invalid Rows: 0

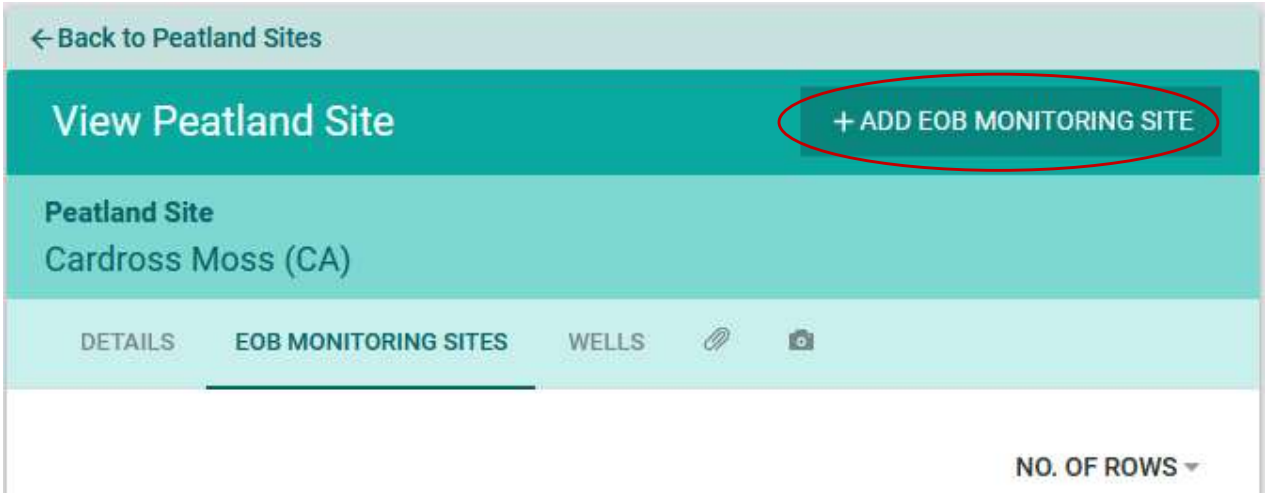
Eyes on the Bog Monitoring Sites

Add EoB Site

To add an EoB monitoring site ( ):

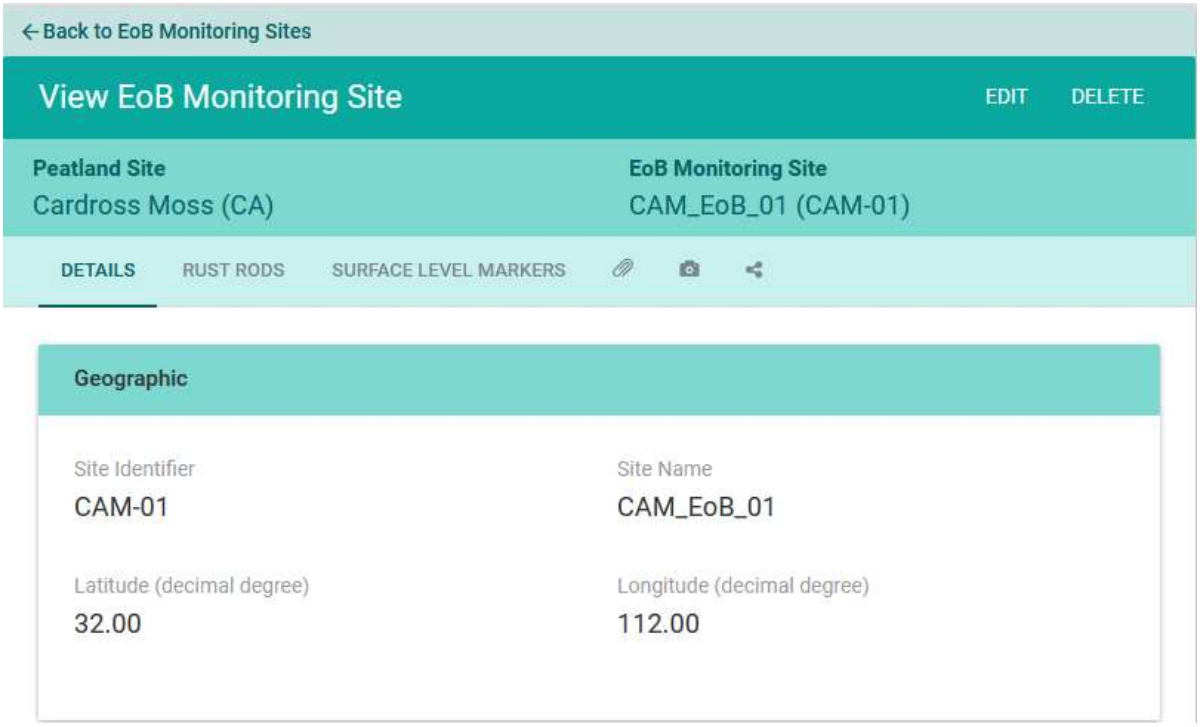
1. Select the Peatland Site via the "magnifying glass" icon,
2. Select the "EoB monitoring sites" tab,
3. Select the "+Add EoB Monitoring site" button.

Note: to complete this section you will need EoB monitoring permissions.



EoB site information can be uploaded for the following fields:

Category	Item	Definition
Geographical	Site identifier*	Unique EoB Site Identifier (3-letter 2-number).
	Site Name*	
	Latitude (decimal) *	Latitude in decimal values. **Centre of site.**
	Longitude (decimal) *	Longitude in decimal values. **Centre of site.**
	Condition Type*	Dominant condition type at the EoB site.
Inventory	Vegetation Type	
	Land Use Type	
Admin	Contact Organisation	
	Contact Name*	
	Contact Email	
	Contact Phone	
	Is publicly available?	Select to indicate a EoB site is available to the public.
Comments		

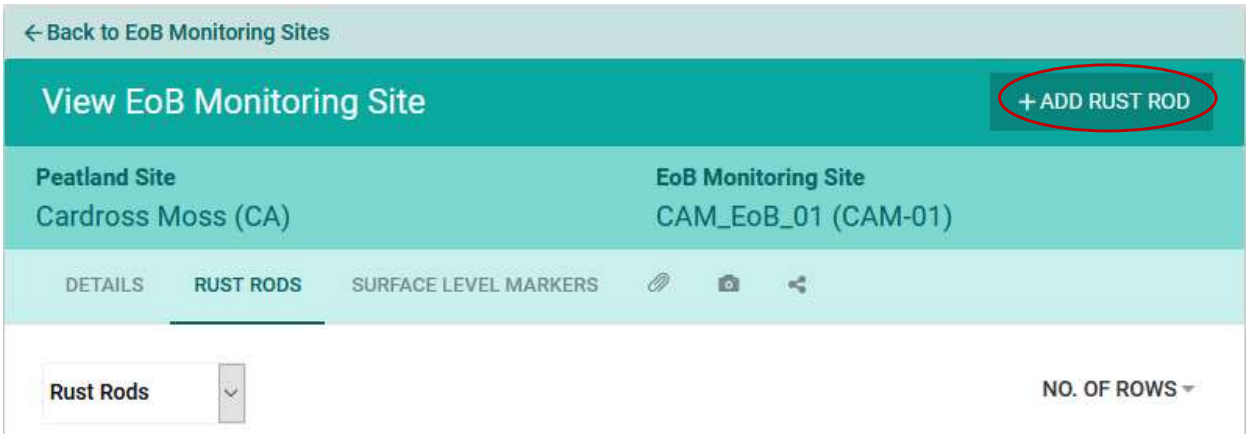


Example of completed Eyes on the Bog Monitoring Site upload.

Rust Rods

To add Rust Rods ( ) to an EoB monitoring site:

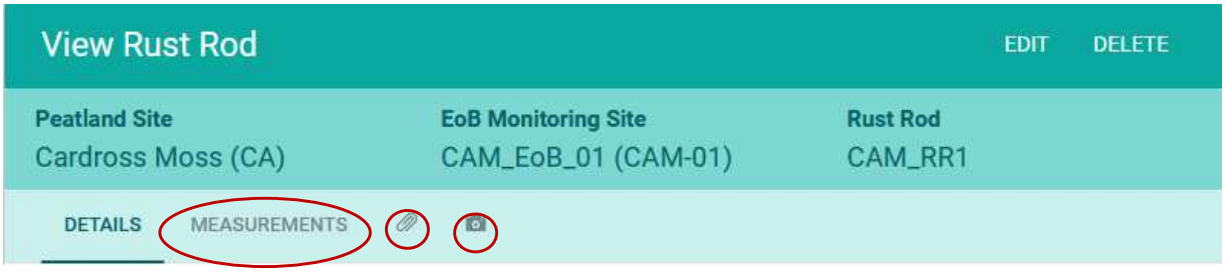
1. Select the Site using the '[magnifying glass]' icon
2. Then Select '+Add RustRod'



3. Rust Rod data can now be added for the following fields:

Field	Definition
Identifier*	Rust rod Unique identifier
Latitude (Decimal degree) *	Latitude in decimal degrees at rod location (or middle of site, if absent)
Longitude (Decimal degree) *	Longitude in decimal degrees at rod location (or middle of site, if absent)
Peat Condition von Post Test	H1-H10
Von Post Classification Uncertain?	Excludes above
Date Installed*	dd/mm/yyyy
Comments	

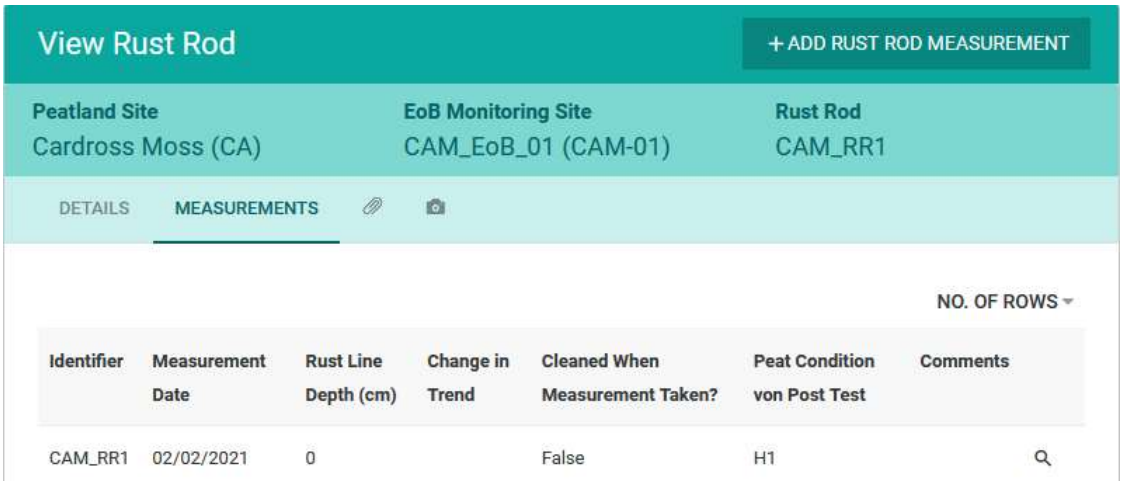
4. Once a rod has been recorded you can add measurements, and link files and photos to it:



Add Rod Measurements

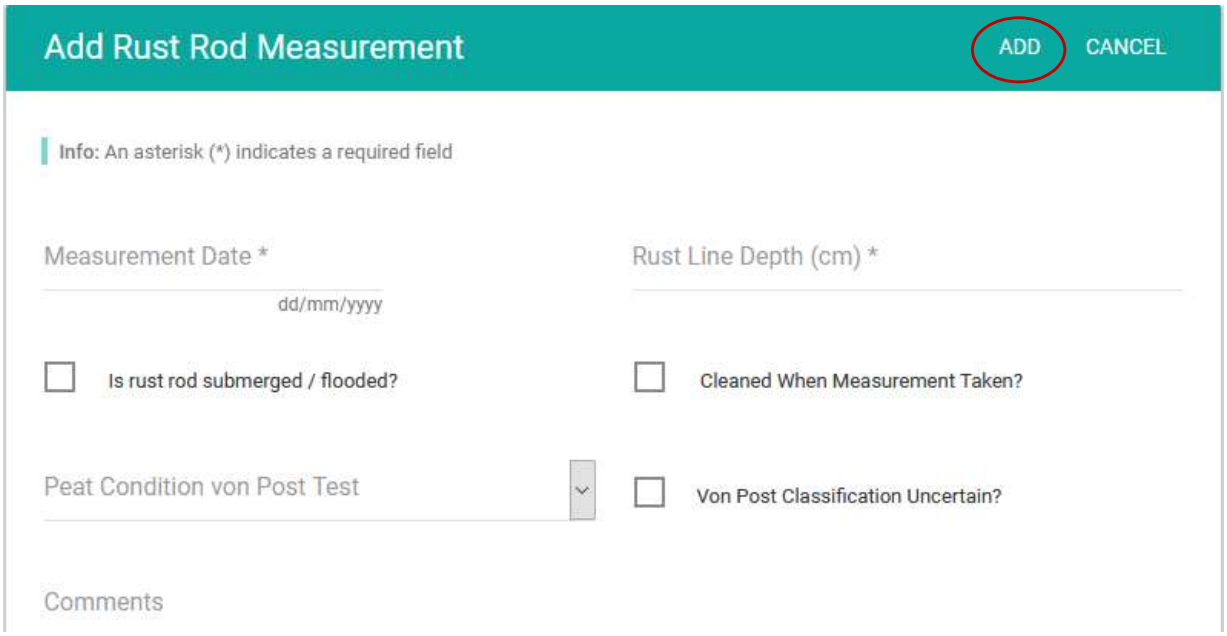
To add measurements to a Rust Rod:

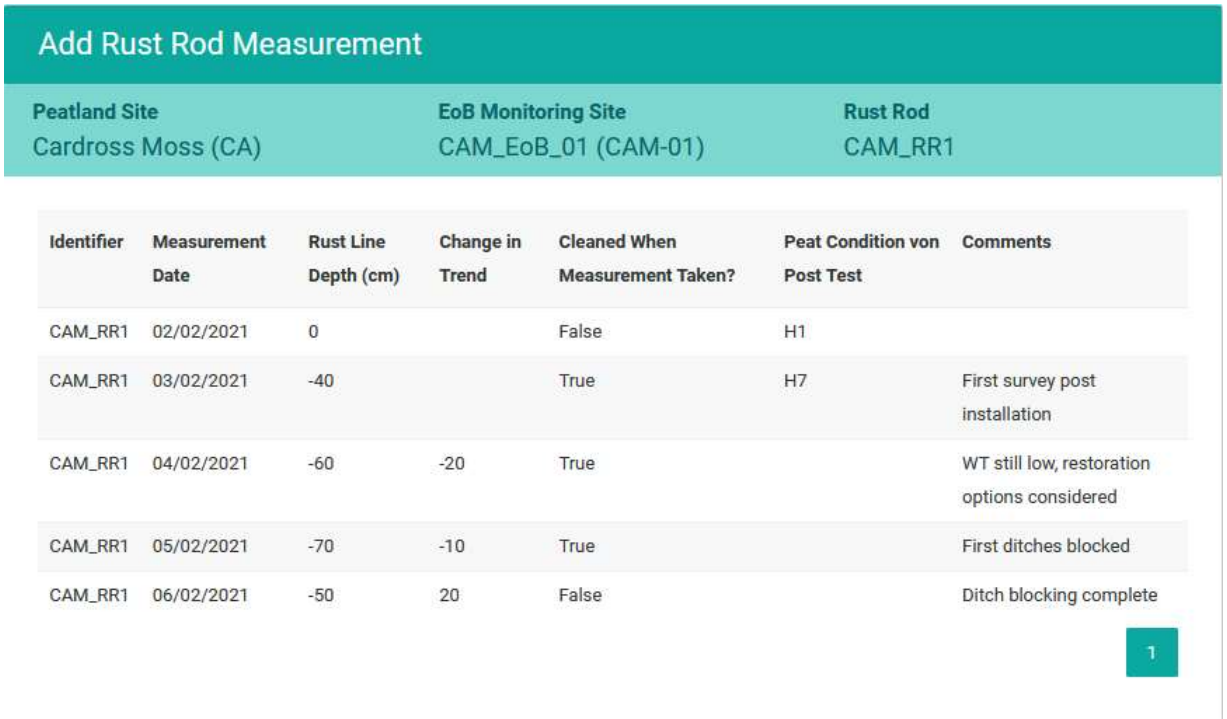
1. Select the Rust Rod using the 'magnifying glass' icon
2. Select the 'Measurements' tab
3. Finally, select '+Add Rust Road Measurement'



You will then be able to add the following information:

Field	**Definition**
Measurement Date*	Date of specific measurement, dd/mm/yyyy
Rust Line Depth (cm) *	Depth of Rust Line above surface
Are Washers Attached?	Are depth washers attached to the rust rod?
Is rust rod submerged / flooded?	
Cleaned When Measurement Taken?	
Peat Condition von Post Test	H1-H10
Von Post Classification Uncertain?	Excludes above
Comments	





Add Rust Rod Measurement

Peatland Site	EoB Monitoring Site	Rust Rod
Cardross Moss (CA)	CAM_EoB_01 (CAM-01)	CAM_RR1

Identifier	Measurement Date	Rust Line Depth (cm)	Change in Trend	Cleaned When Measurement Taken?	Peat Condition von Post Test	Comments
CAM_RR1	02/02/2021	0		False	H1	
CAM_RR1	03/02/2021	-40		True	H7	First survey post installation
CAM_RR1	04/02/2021	-60	-20	True		WT still low, restoration options considered
CAM_RR1	05/02/2021	-70	-10	True		First ditches blocked
CAM_RR1	06/02/2021	-50	20	False		Ditch blocking complete

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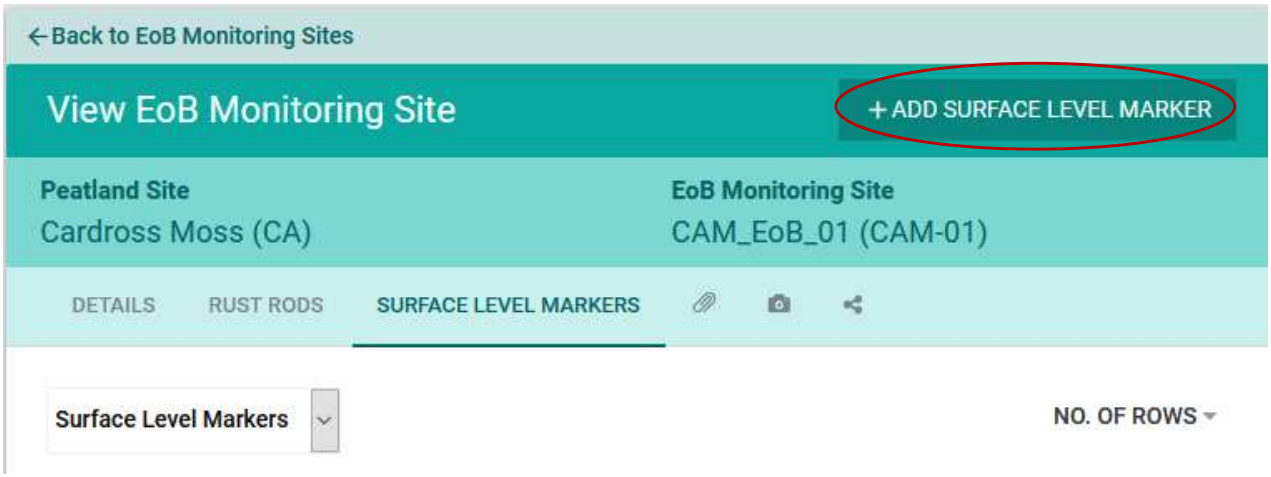
Notes:

- Positive values indicate a water level above the surface – and can therefore only be entered if selecting 'Is site flooded?' above.
- The first measurement will not contribute to the change in trend, due to initialisation of the peat site.
- Before deleting a Rust Rod, all measurements must be independently deleted first.

Surface Level Marker

To add a Surface Level Marker ( ):

1. Select the EoB monitoring site,
2. Go to the Surface level markers tab,
3. Select '+Add Surface Level Marker'.



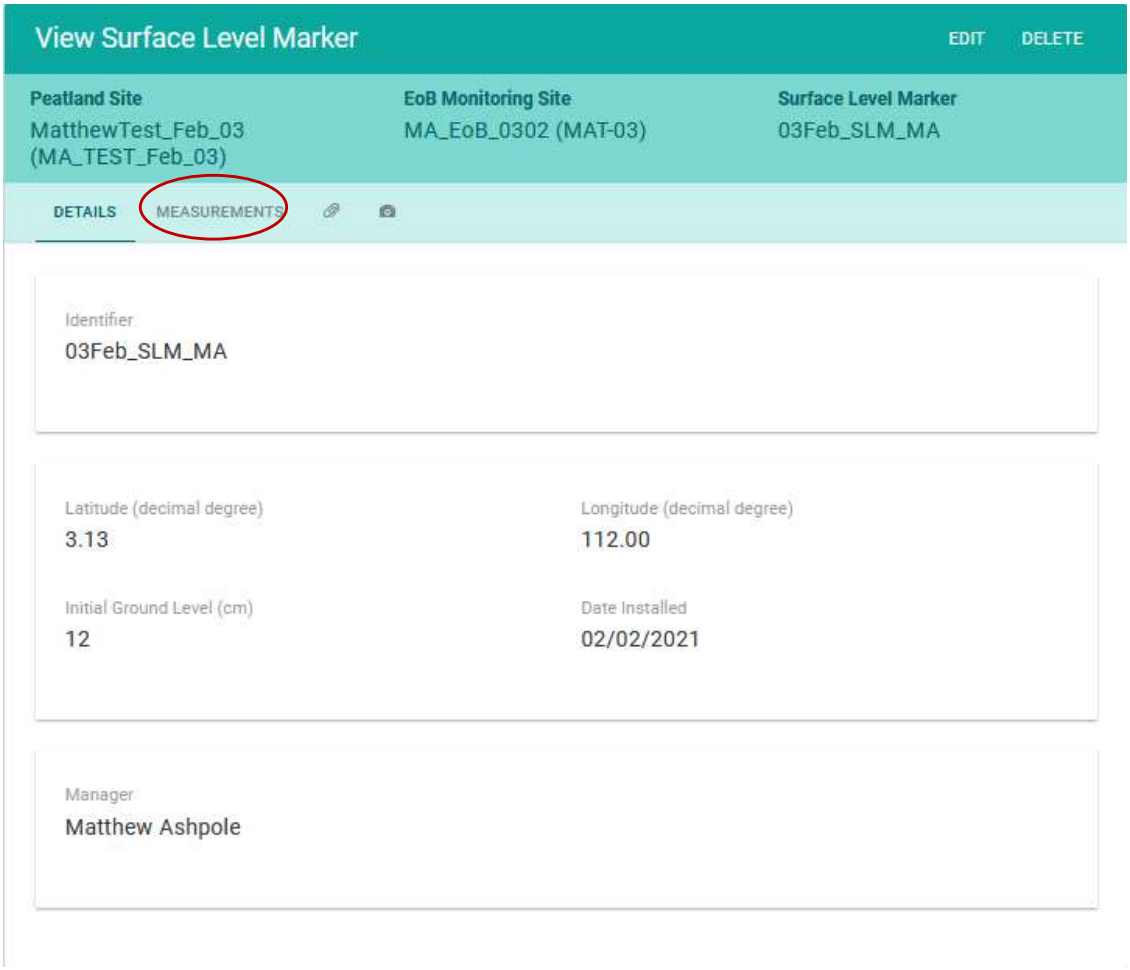
You can then enter the following information:

Field	Definition
Identifier*	Unique ID for the marker
Latitude (Decimal degree) *	Latitude in decimal degrees at marker location (or middle of site, if absent)
Longitude (Decimal degree) *	Longitude in decimal degrees at marker location (or middle of site, if absent)
Initial Ground Level (cm) *	Measurement of level at first installation
Date Installed*	dd/mm/yyyy
Comments	

To add subsequent Surface Level Marker measurements

1. Navigate to the 'Measurements' tab,
2. Select '+Add Surface Level Marker Measurement',
3. Enter the field data the same as above.

The values will be displayed chronologically, and peat depth trends will be shown.


View Surface Level Marker
EDIT
DELETE
Peatland Site
MatthewTest_Feb_03 (MA_TEST_Feb_03)
EoB Monitoring Site
MA_EoB_0302 (MAT-03)
Surface Level Marker
03Feb_SLM_MA
DETAILS
MEASUREMENTS
Identifier
03Feb_SLM_MA
Latitude (decimal degree)
3.13
Longitude (decimal degree)
112.00
Initial Ground Level (cm)
12
Date Installed
02/02/2021
Manager
Matthew Ashpole

Add Surface Level Marker Measurement

Peatland Site	EoB Monitoring Site	Surface Level Marker
MatthewTest_Feb_03 (MA_TEST_Feb_03)	MA_EoB_0302 (MAT-03)	03Feb_SLM_MA

Identifier	Measurement Date	Ground Level To Initial Washer (cm)	Current Peat Depth (cm)	Peat Depth Trend Relative to Last Survey (cm)	Comments
03Feb_SLM_MA	02/02/2021	0	12	0	

1

Add Surface Level Marker Measurement

ADD CANCEL

Info: An asterisk (*) indicates a required field

Measurement Date *

dd/mm/yyyy

Ground Level To Initial Washer (cm) *

Comments

Photographs

Photographs can be added at all levels:

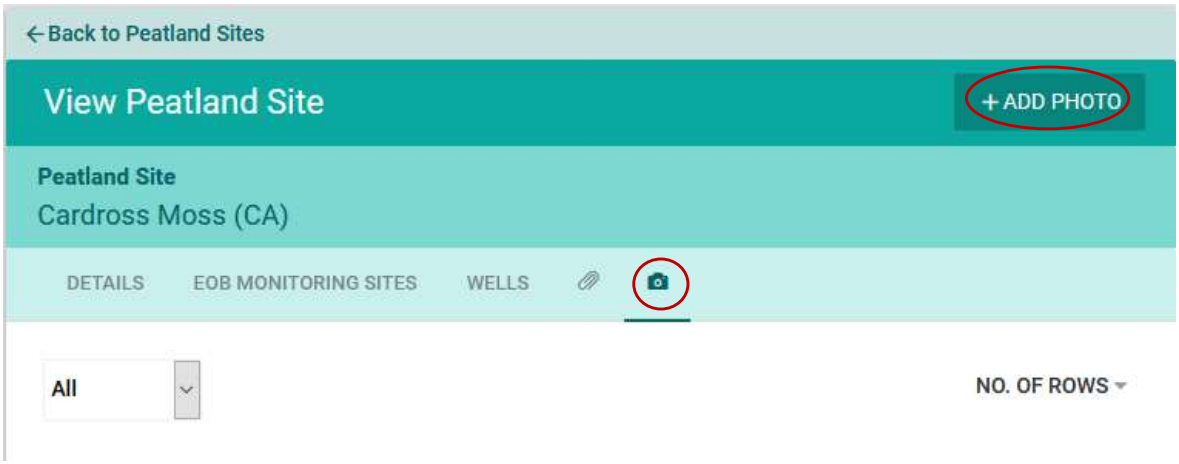
- Peatland sites,
- Wells,
- Eob Monitoring sites,
    - Rust Rods
    - Surface Level Markers

Add photo:

To add a photo ( ):

1. Select the 'Camera' icon,
2. Select the '+Add Photo' button.

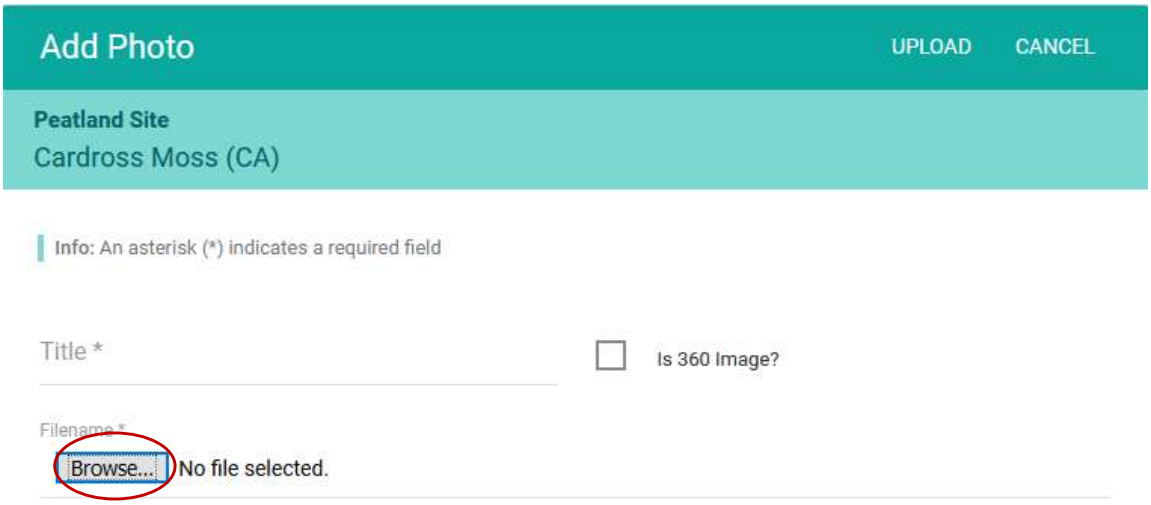
Note: You can upload photos with extension .JPEG, .GIF, and .TIFF. There is a file size limit of 50mb.



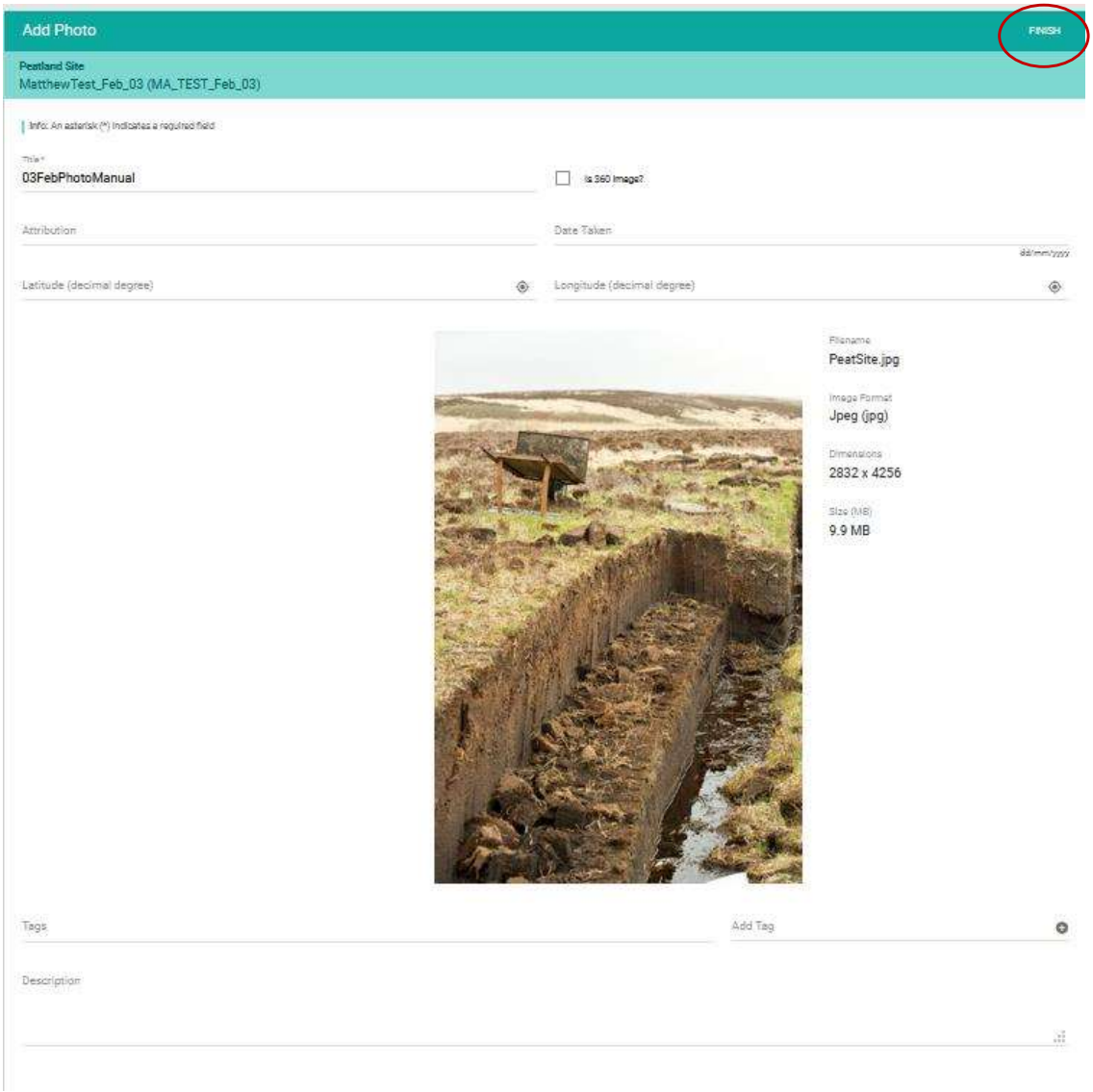
You can then enter the following information:

Field	Definition
Title*	Name of the photograph
Is 360 image?	Indicate if the photo is 360 (vr)
File Selection*	Opens file explorer

3. Selecting the 'Browse…' button will open a file explorer window to search for the file to upload.
4. After selecting the file to upload, click 'Open', then select 'Upload'.



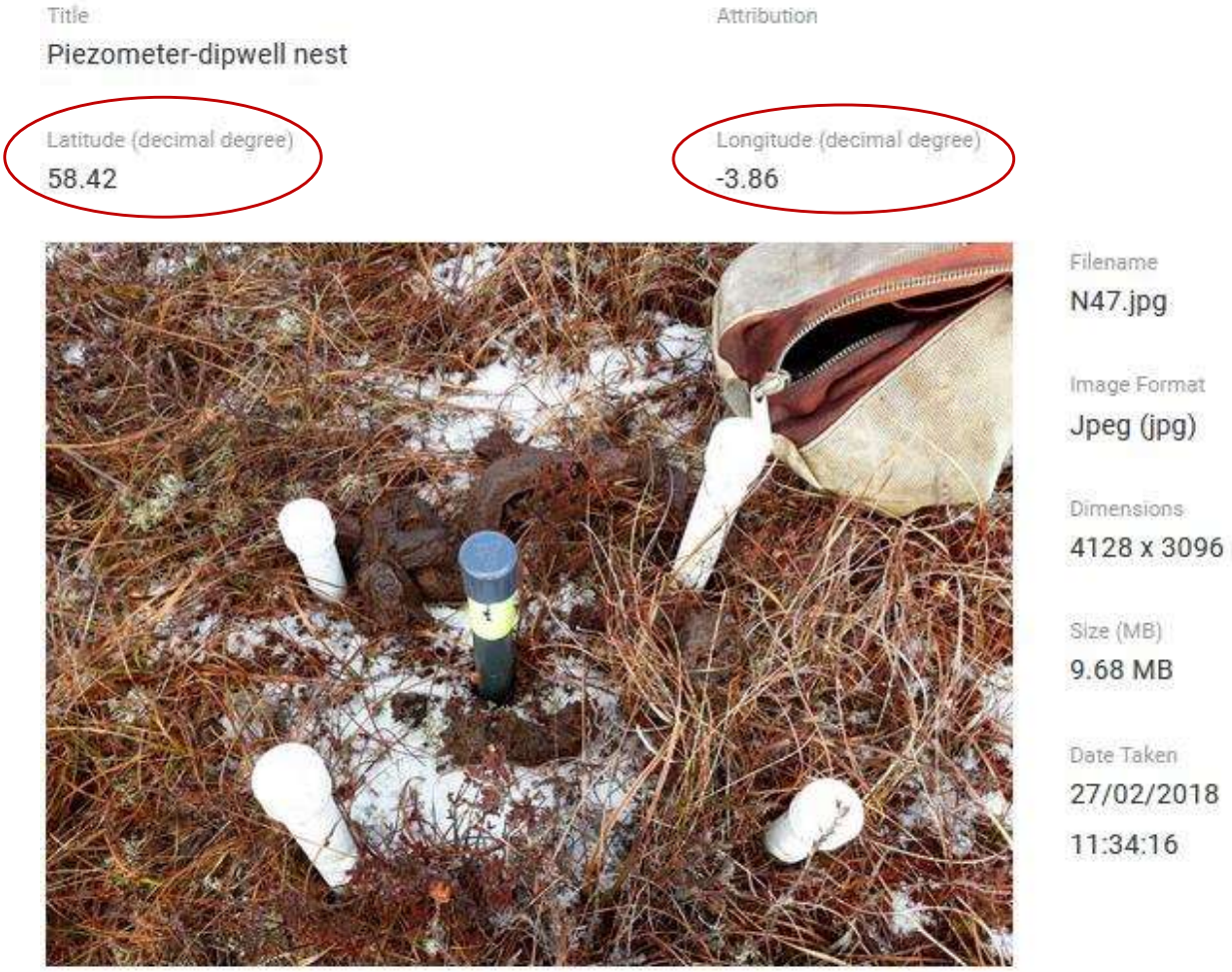
Note: If you click 'Upload before adding a title, an error message will be displayed.



5. Once all information is complete click the 'Save' button. The file uploaded will be displayed in the 'Data Files' screen.

Geotagged images:

Images with ‘geotag’ information included in their metadata will automatically fill the ‘Latitude’ and ‘Longitude’ fields.

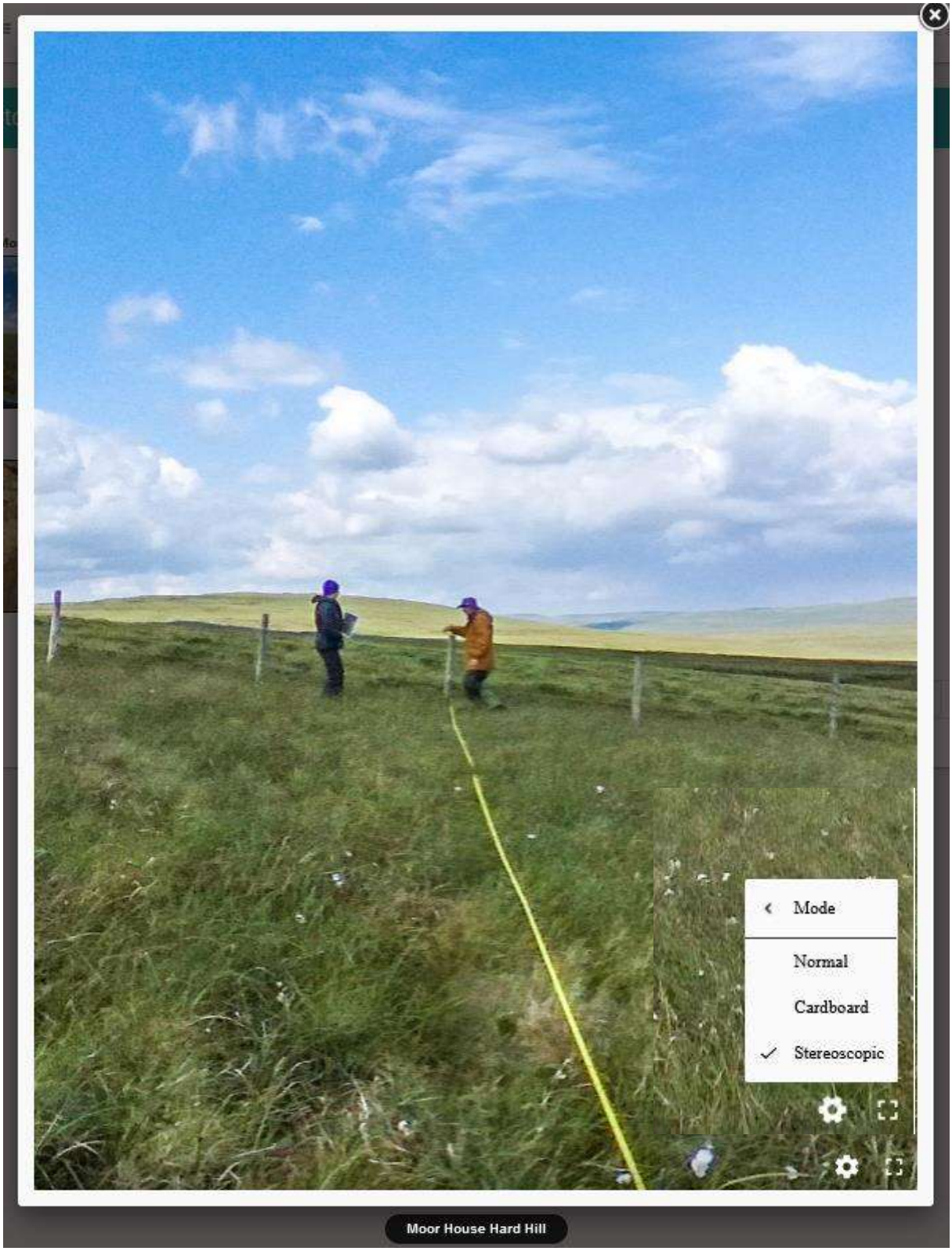


VR Images:

Images uploaded in the VR format will be viewable in an in-browser viewfinder that can be controlled using the mouse.

These images can also be viewed in true VR using a ‘Google Cardboard’ by:

1. Selecting the ‘cog’ icon in the bottom right,
2. Changing ‘Mode’ to ‘Cardboard’.


Mode
Normal
Cardboard
Stereoscopic
Moor House Hard Hill

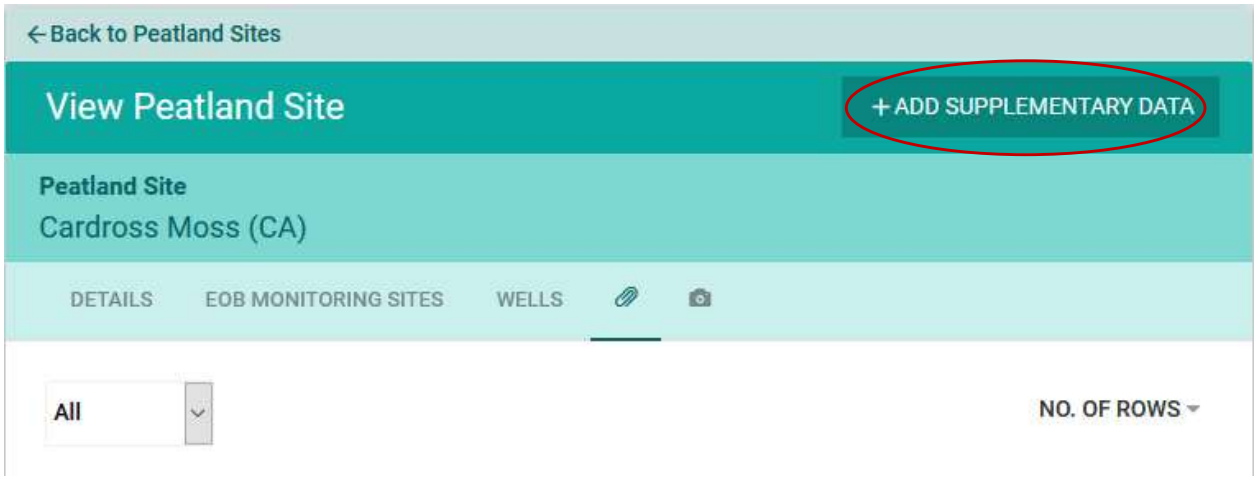
Adding Supplementary Data

Files with Supplementary information can be added at all levels:

- Peatland Site
- Wells
- EoB Monitoring Site
    - Rust Rods
    - Surface Level Marker

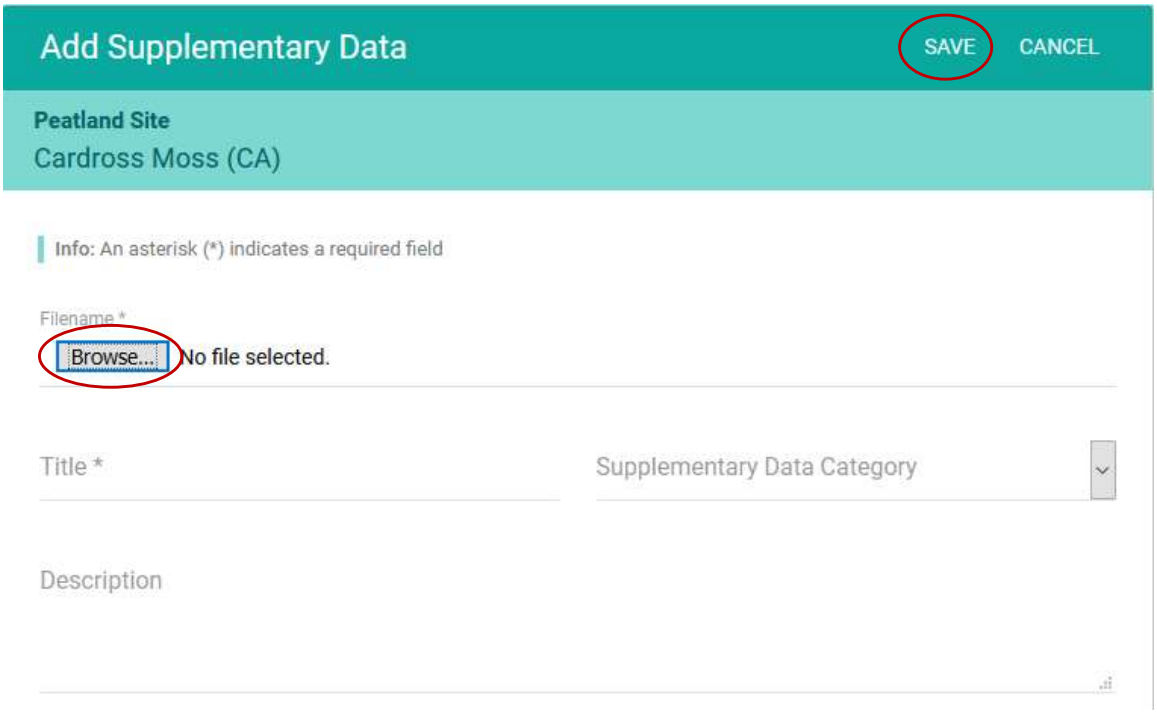
To add supplementary data ( ):

1. Decide at which level you wish to add a file and click on the 'paperclip' icon. Make sure that you can see the details of the level that you want,
2. Select '+Add Supplementary Data',
3. Select the file to be uploaded via the 'Browse…' button.



You can then enter the information listed below:

Item	Definition
Browse… *	Opens file explorer
Title*	Title of file
Supplementary Data Category	(Data, Map, Methods, Notes)
Description	Long form description



Once all information is completed click the 'Save' Button. The File uploaded will be displayed in the Supplementary Data screen.

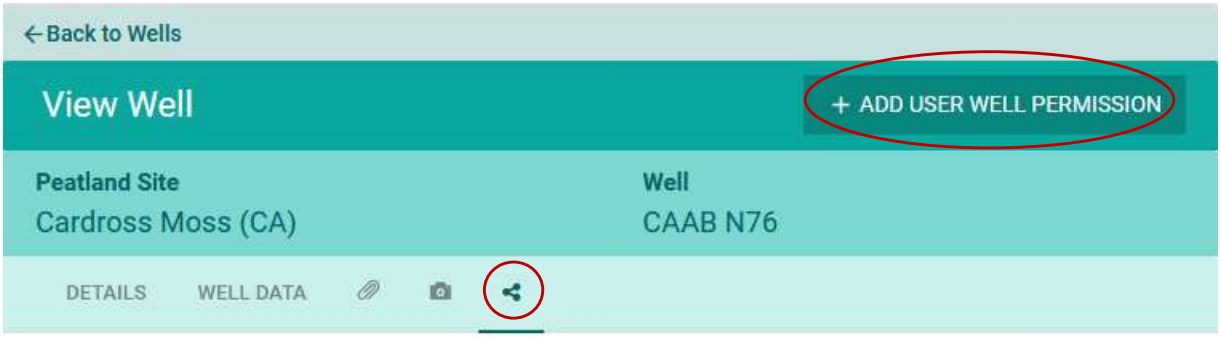
Note: Data can be uploaded in all formats, e.g. .docx, .xlsx, .pdf etc. There is a file size limit of 50mb.

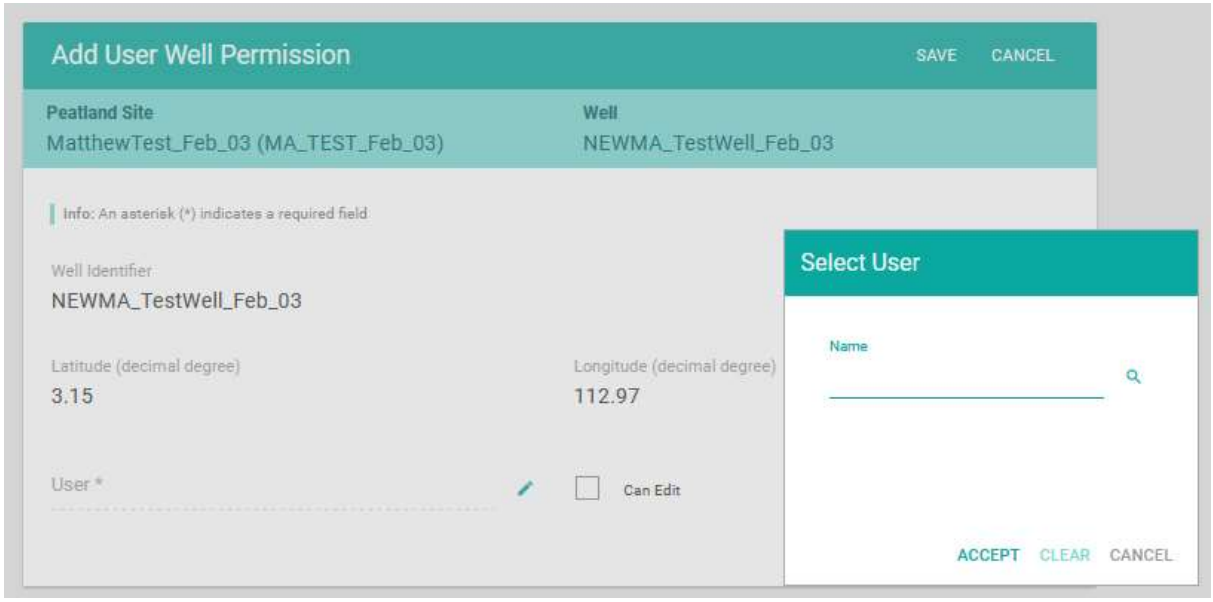
Sharing permissions

If you want to share permissions to edit sites or wells, you must be the owner of the site & data at the given level (Peatland Site, Well, Survey, EoB site etc.).

To share e.g. Well Data ( ):

1. Go to the 'Peatland Site' screen of the Well Data you wish to share,
2. Select the 'Wells' tab,
3. Select the Data you would like to share using the 'Magnifying glass' icon,
4. Select the 'Share' Icon,
5. Select the '+ Add User Survey Permission' button,
6. Input the target user's email address using the pen Icon. You can search for them using either their full name or email.
7. Decide whether the target user should be able to edit the data you are sharing.





The user will then have permissions to edit information on the well and upload their own data.

Search Functionality

The advanced search functionality ( ) allows search at 3 main levels

- Peatland Sites
- Wells
- EoB Monitoring Sites

Within these, attached information can be queried, including:

- Attachments,
- Photos,
- Well Surveys,
- Rust Rods, and
- Surface Level Markers

Search at the Peatland Site Level

The Database will perform the search based on the parameters selected when the 'play' button is selected. The output can be saved as either a .CSV or .xlsx.

The output includes only metadata for sites and wells, and raw data for the EoB sites that have agreed to open access data use.

Below are the available search parameters:

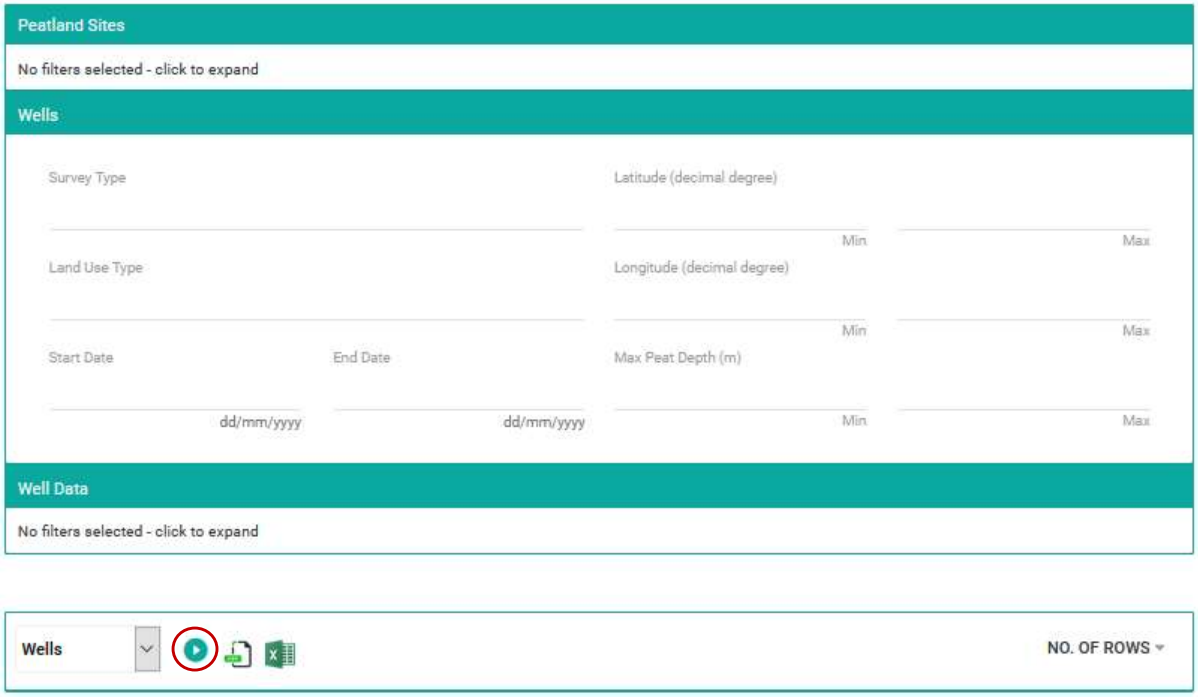
Search at the Well Level

Navigate to the ‘Wells’ tab of the Search section.

Only the wells that you have access to will be displayed. This includes wells that you have created and wells that you have been granted access to.

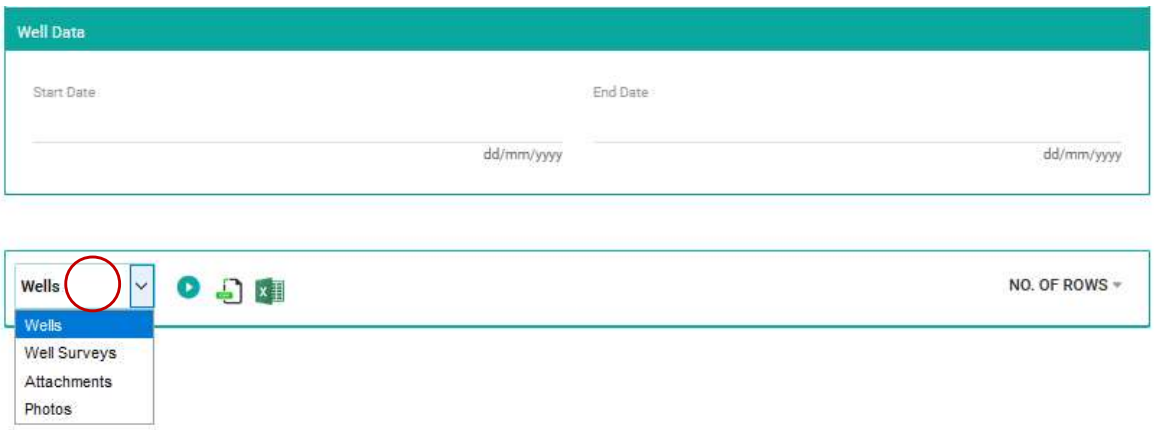
You can also search for Wells by searching metadata of the overall site, and as such ‘Peatland Site’ filters remain on this page.

Below are the available search parameters:



In order to search for Well Data entries, you will do so via this tab on the ‘Well Data’ section.

Well Data can only be filtered by Start and End data independently but should be combined with ‘Peatland Site’ and ‘Well’ Filters if more specific results are desired.

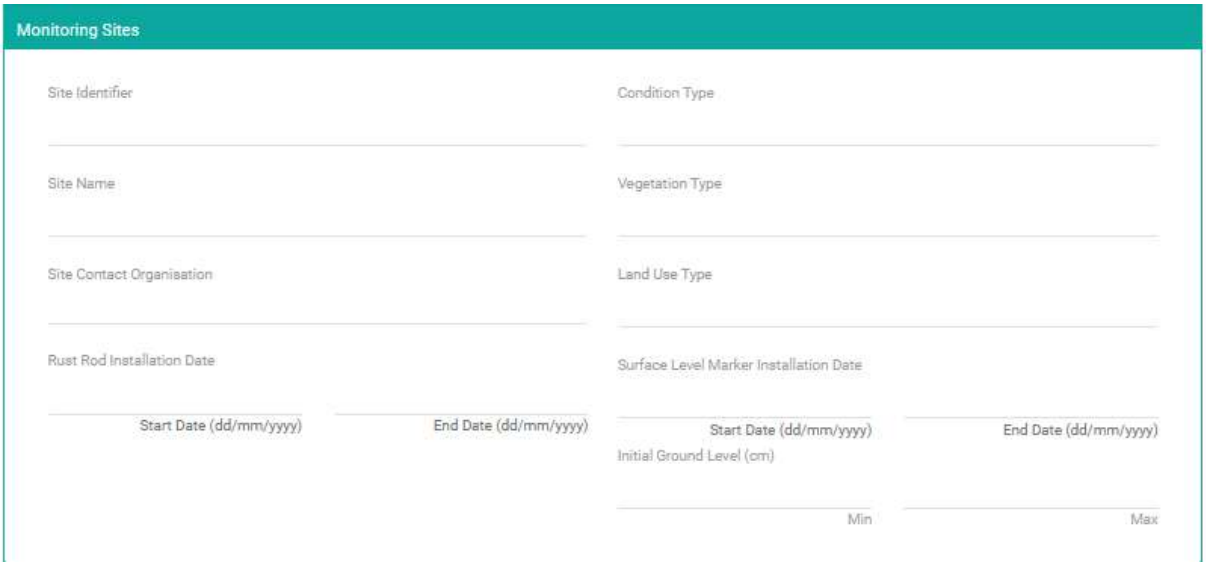


The database will perform the search based on the parameters selected.

Search at the EoB Monitoring Site level

Navigate to the ‘Monitoring Sites’ tab of the Search section.

Below are the available search parameters:



The EoB search results can be downloaded at various levels of specificity (below). They can be downloaded as .CSV files or .xlsx as before.

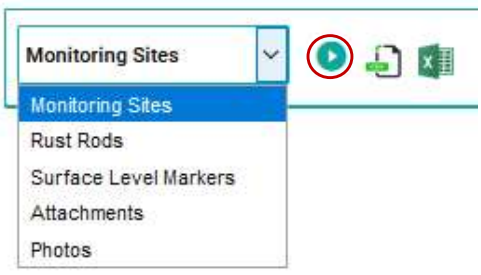


Image Search

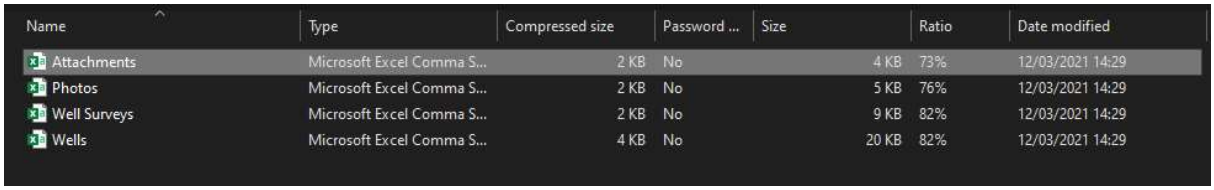
Images cannot be individually queried, only downloaded by selecting 'Photos' and selecting your choice of the above filters.

However, photo metadata is included in the downloads, including the Title and File Name. Thus, when uploading photos please use an appropriate title and File Name for east of recognition in later searches by yourself or other researchers.

Download Format

Downloading as .xlsx via the 'Excel' Icon will provide an excel file with three tabs: 'Peatland Sites', 'Photos', and 'Attachments', providing the metadata for these fields.

Downloading as .CSV will provide a .zip folder containing four individual files for each of the above fields, replacing 'Peatland Sites' with 'Wells', and adding Well Surveys. This again only provides metadata – full datasets for well measurements must be downloaded separately.



The headers of the 'Peatland Sites' file is consistent with the search fields.

The headers of the 'Wells file are as follows:

Site Name	Well Identifier	Latitude (decimal)
Longitude (decimal)	Manager Name	Land Use Type Name
Peat Depth	Well Diameter	Start Date
End Date	Survey Type Name	Logger Details
Regular Checks Carried Out	Peat Base	Is Well Lined
Lining Tube Perforation Type Name		Lining Tube Details
Lining Tube Installation Type Name		Vegetation description
Fixed to Datum Post	Has Response Time Test	Response Test Details
Created On	Is Well Survey	Well Observation Details
Is Peat Surface Survey	Peat Observation Details	

When downloading Well Survey data, a 'Well Surveys' tab will be added to the .xlsx, and separate file for .csv, with the headings:

Site Identifier	Site Name	Well Identifier
Summary	Start Date	End Date
No of Measurements		