

Using the Pantheon website to analyse invertebrate species lists

The Pantheon website is at:
pantheon.brc.ac.uk

To add data to the site you will first need to create a user account and log in.
 More help is available at pantheon.brc.ac.uk/content/user-guides

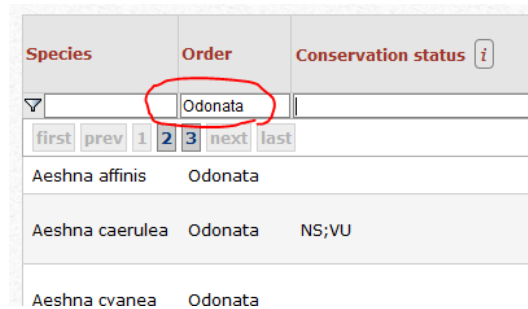
Exploring Pantheon

There is quite a lot of background information and documentation in the Help and About menus on Pantheon itself, including a [bibliography page](#).

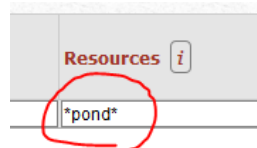
You can see the full list of species that Pantheon knows about by going to the Data menu and choosing [Species index](#). When looking at any species index page in Pantheon, don't forget that you can control which columns are displayed via the '+' button on the right-hand side, and you can filter the use by typing in to the empty boxes at the top of each column:



For instance, you can filter the "Order" column of the species index to see just the dragonflies:



Or you can filter to see all the species linked to a particular habitat or resource – to do this you usually need to use 'wildcards', by typing in an asterisk either side of the keyword that you are filtering by. For instance, to see all the species linked to the "pond" resource, use asterisk wildcards in the "Resources" column filter:



Wherever you see an 'i' button (e.g. next to "Resources" above) you can hover over it for brief information or click (right-click for a new tab) to see the full information.

From the Species index page it is possible to download the full species index as a zip file (containing a csv file). This provides additional options for exploring the data from which Pantheon is constructed.



Adding data to Pantheon

There are three ways of adding data to Pantheon: by adding individual species records, by importing a text (.csv) file, or by pasting in a species list. The latter option is usually easiest to use and provides more flexibility, and is what we will use for this session.

To explore Pantheon you will need to add your own species list/s. These may be based recording you have done yourself, or on species lists available for the site/s you are interested in. You need to have a list of scientific or English name in a spreadsheet or on separate lines in a document. Once the list has been copied into Pantheon you can store it there on a temporary or permanent basis – it is best to store them as temporary lists unless they are new data that you wish to contribute to the Pantheon database.

Copy and paste a species list

- From the “Add data” menu, choose “Paste species lists”. You are then presented with a “My species lists” page. This will show any previous lists that you have pasted into Pantheon as well as allow you to add new ones.
- To add paste a new species list, click on the “Paste new species list” link. You will be presented with a form that has three text boxes in it. Enter a name in the “List title” – this is a mandatory field and what your sample list will show up as on the “My species lists” page.
- The “List description” is optional, but is a good place to add some information about what your list relates to (e.g. whether it is the result of a standard sample, or a collated list from external sources etc.)
- In the “Enter the list of items”, paste in your species list. Scroll to the bottom of the page and click on the “Check” button. This will check the names on your list with the species names within Pantheon. Where the name matches, the text will turn green and there will be a green tick at the end of the name. Where there is no unique match, the text will turn red and suggestions from the Pantheon species dictionary will be displayed underneath. Click on the name that you would prefer to use. If there is no match, there will be a red X at the end of the name. Unmatched species will not be used in any analyses.

Tanysphyrus lemnae ✓
Thryogenes festucae ✓
Muellerianella extrusa ✓
Rhaphium caliginosum (unique match could not be found - click on the correct option below)
Rhaphium caliginosum Meigen, 1824 <small>[accepted name]</small>
Rhaphium caliginosum misident. (Parent, 1938) [syn. of Rhaphium lanceolatum Loew, 1850]
Syntormon tarsatum ✓
Telmaturgus tumidulus ✓
Teuchophorus spinigerellus ✓
Thrypticus smaragdinus ✓
Scaptomyza flava ✓
Scaptomyza pallida ✓
Liopterus haemorrhoidalis ✓
Rhantus (Nartus) grapii ✓
Phyllodromia melanocephala ✓
Rhamphomyia caliginosa ✓
Notiphila caudata ✓
Notiphila cinerea ✓
Notiphila dorsata ✓
Notiphila maculata (unique match could not be found - click on the correct option below)
Notiphila maculata Stenhammar, 1844 <small>[accepted name]</small>
Notiphila maculata authors, misident. [syn. of Notiphila maculata Stenhammar, 1844]
Notiphila riparia ✓
Notiphila subnigra ✓
Notiphila umbrosa ✓
Ochthera manicata ✓
Total: 22
Matched: 20
Queried: 2
Unmatched: 0

- Once the species names have been checked, save the list by clicking on the “Save” button. Your species list will then show on the “My species lists” page. There are a number of actions for you to choose from:
 - Analyse – this will perform the various Pantheon analyses
 - Edit – allows you to edit your species list



- Save to public database – allows you to add metadata to your list and save your data permanently into the Pantheon database – DO NOT USE this for test data
- Add to Quick Analysis Group – this allows you to group together several existing lists (for instance, you may wish to upload lists for several different compartments within a single site, but also want to analyse the combined list for the site as a whole)

The “Save to public database” option asks you to add some information about sampling methods used, date, location and grid reference. **If you add this metadata and save it then your species list will become public**, i.e. anyone logged into Pantheon will be able to see it. This should only be used for genuine samples that you wish to make available to others.

Samples that you upload but do not Save to public database will be stored within your own Pantheon account and you will be able to retrieve them, but they are not added to the permanent Pantheon database.

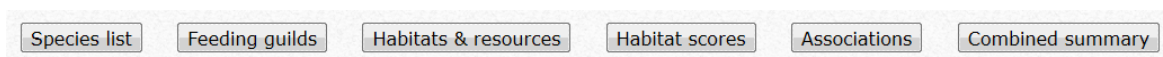
Returning to samples that you have previously uploaded

If you were to add a sample plus metadata and fully save it then you would find it in the “Explore” menu, under “Explore my samples”. But we are not going to fully save our work from today.

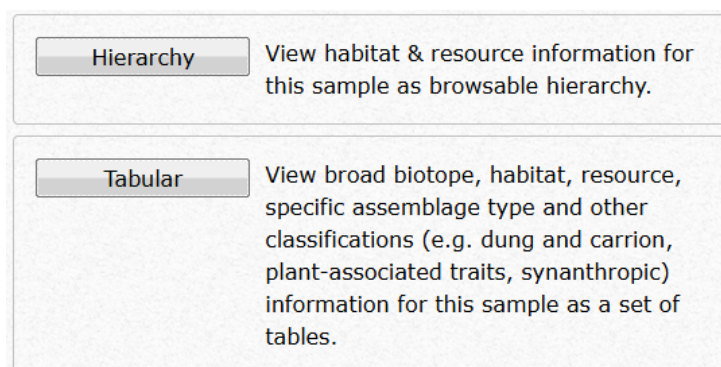
Samples that you have pasted in but not fully saved are available by returning to the “Add data” menu and to “Paste and analyse species lists”. Find the sample that you want to work with and click on the “Analysis” link.

Spend some time exploring the clickable links (such as the numbers of species for each taxon group). You may find it useful to right-click on these links and “open in new tab”, rather than left-clicking and losing sight of the main page.

On the main analysis page scroll down to the buttons providing analysis options:

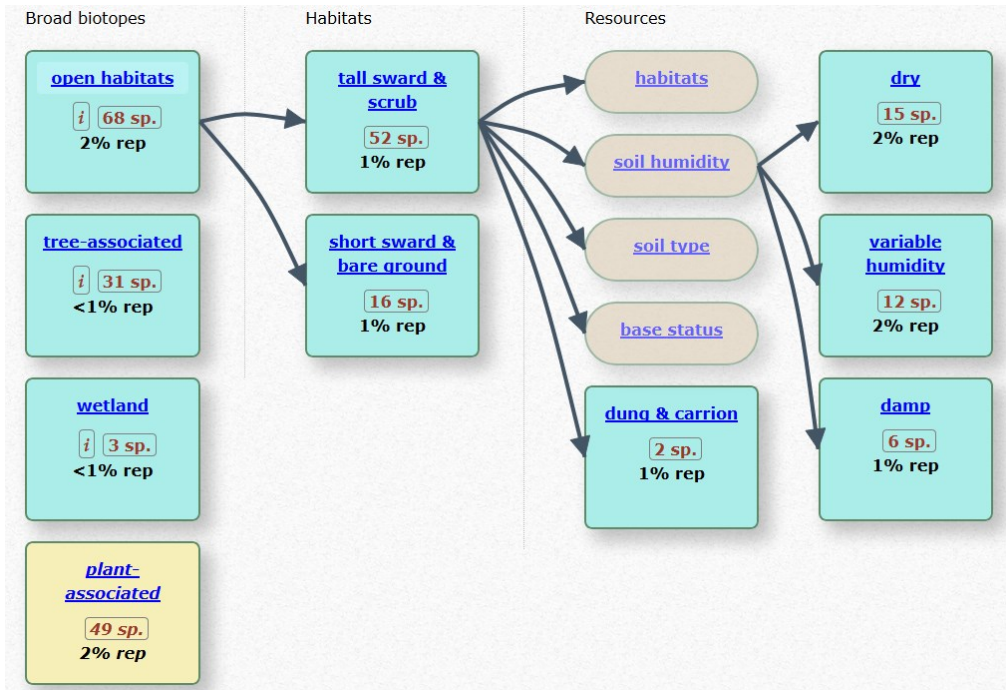


All of these are worth exploring, but the one with most detail is the “Habitats and resources” button. This takes you to various ways of exploring the habitats and resources associated with each species:





The “Hierarchy” option provides a diagrammatic way of exploring the habitats associated with your species:



If you click on the headings in the various boxes they will open up the next level in the hierarchy (e.g. I clicked on “open habitats” in the first column above to display “tall sward & scrub” etc.). The species numbers can be clicked to open up the list of species associated with any part of the hierarchy.

Returning to the main “Habitats and resources” options, the “Tabular” views provide tables for the various levels of the hierarchy:

Broad biotope	No. of species	% representation	SQI	Species with conservation status	Conservation status
open habitats	210	5	107	12	4 Section 41 Priority Species; 2 VU; 3 NS; 2 NT; 3 Nb; 1 DD; 1 Section 41 Priority Species - research only
wetland	125	5	114	4	4 NS
tree-associated	117	3	117	6	1 Section 41 Priority Species; 1 EN; 1 Legal Protection; 2 Nb; 3 NS
coastal	1	<1	100		

There is quite a lot of information here, including the number of species associated with each category, what proportion of the total species pool this represents, an SQI (Species Quality Index) score, and information on whether there are species with conservation status (Red List etc.) associated with each category. It takes time to become familiar with which parts will be most relevant to your purposes. From this part of the website you can download the data for whichever level of the hierarchy you wish to work with, see link at foot of each tab:

Habitats & resources: tabular: sample ID 83

Broad biotope	No. of species	% representation	SQI	Species with conservation status	Conservation status
open habitats	19	<1	100		
tree-associated	18	<1	163	2	1 NS; 1 RDB 2
wetland	2	<1	250	1	1 Notable

Showing records 1 to 3 of 3

[Download this report](#)



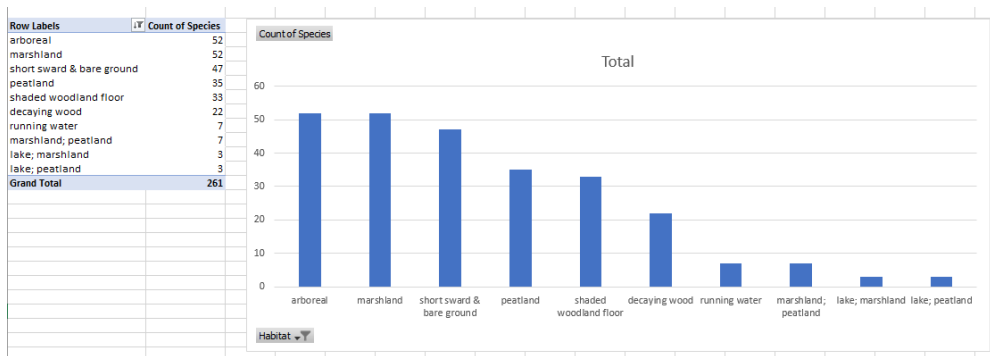
Returning to the buttons at the foot of the page, the “Habitat scores” button provides a range of scores that can be applied to the species in your sample, usually indicating fidelity to one or more habitats. These scores need to be interpreted carefully as they are based on differing criteria for the various habitats; for more information see the “About” menu and the links on the “Pantheon” page (www.brc.ac.uk/pantheon/content/habitat-scores) and also the relevant entries in the glossary, tagged “quality index” (www.brc.ac.uk/pantheon/tags/quality-index).

The “Associations” button will produce a list of species associated with the species in your sample, including for example foodplants, or prey items of specialist predators. This may help to define which resources are important to support the species known from your site, and the list highlights associations linked to species that have a conservation status.

Downloading the analysis results

The final button in the main set is for “Combined summary”, which allows you to choose from a set of reports and in most cases to download the results as a CSV file. The most comprehensive set of data that you can download is via the “Species list”, which will produce a CSV file of all the habitats and traits for all the species. Make sure you can download the species list from your sample, and open it in Excel.

Once in Excel, it is worth getting familiar with how the data is presented, and you can use Excel’s filtering options and experiment with pivot tables to display it in various ways. For example, to produce a bar chart of species per habitat, set up a pivot table to show numbers of species per habitat, and then add a pivot chart.



Filters can be used to show only those species with a conservation status:

