GBIF.ES TRAINING GUIDE: HOW TO SEARCH, REFINE AND DOWNLOAD DATA FROM THE GBIF.ES BIODIVERSITY DATA PORTAL

July 2020

GBIF.ES training guide: How to search, refine and download data from the GBIF.ES Biodiversity Data Portal

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URL:

https://www.gbif.es/wp-content/uploads/2020/07/online-exercises-gbifes-atlas-en.pdf

CONTENT

This document is a practical guide to learn how to search, refine and download data from the Biodiversity Data Portal of GBIF.ES (https://datos.gbif.es/?lang=en). It is a creation of the Spanish GBIF Node, that is sponsored by the Spanish Ministry of Science and Innovation and managed by the Spanish National Research Council (CSIC). The Data Portal of GBIF.ES is based on the Atlas of Living Australia infrastructure and it is supported by IFCA and GBIF.

AUTHOR

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TRANSLATION

Izquieta-Rojano, S., Rodríguez-Andreu, J.L., Villaverde, C., Torralba, A. (2020). University of Sevilla as member of the project EOSC-hub under grant number 777536 (sizquieta@us.es ; torralba@us.es)

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CONTENTS

Introduction

This document has been developed by the service provider GBIF Spain that has integrated into the EOSC Marketplace seven services of its Biodiversity Data Portal and the e-learning service. The guide has been translated to English in the framework of the EOSC-hub project.

The main purpose of this tutorial is to provide EOSC-hub with a learning resource to allow its users to become familiar with the GBIF.ES Biodiversity Data Portal and its interface. With the following exercises, users will become familiar with the searching, refining and data downloading processes at GBIF.ES Data Portal.

The exercises presented in this document are based on the following original GBIF.ES documents in Spanish:

- https://www.gbif.es/wp-content/uploads/2019/09/Portal-de-datos-GBIF.es_.pdf
- https://docs.google.com/document/d/1Hrn3k-eRna1lrhV5JLChua64TSHV80UjpV98Nft6Cvs/edit

These exercises can be complemented with the following video tutorials:

- How to search and download biodiversity data from a Living Atlas https://youtu.be/pEUp1B1pRxw
- How to use the spatial modules of the Living Atlases https://youtu.be/Uo64PUNuxXs

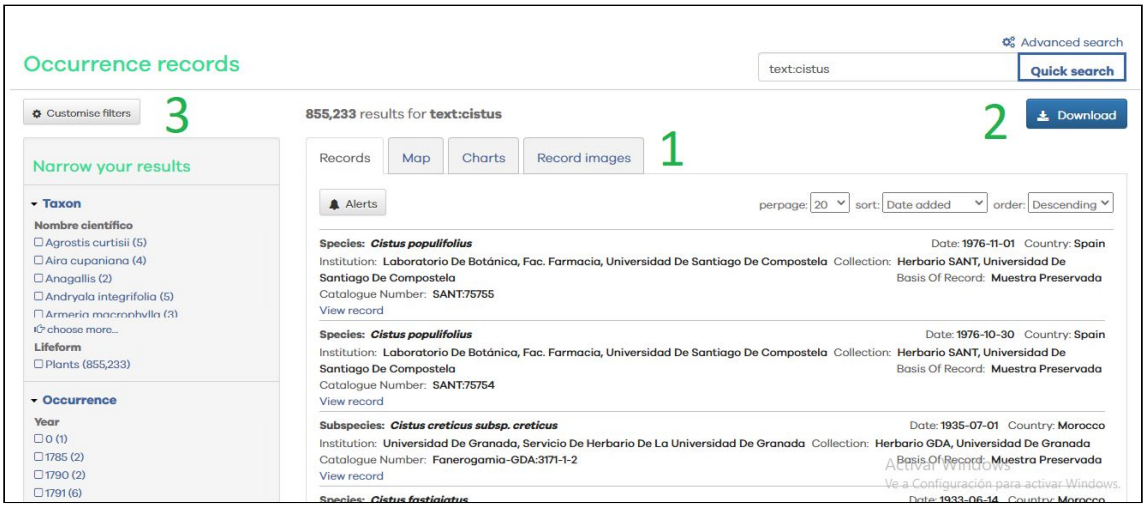
1. Simple search, visualization and download of records

Before we start

The purpose of this exercise is to learn how to search data through the GBIF.ES Biodiversity Data Portal and refine the search using the filters available.

Exercise

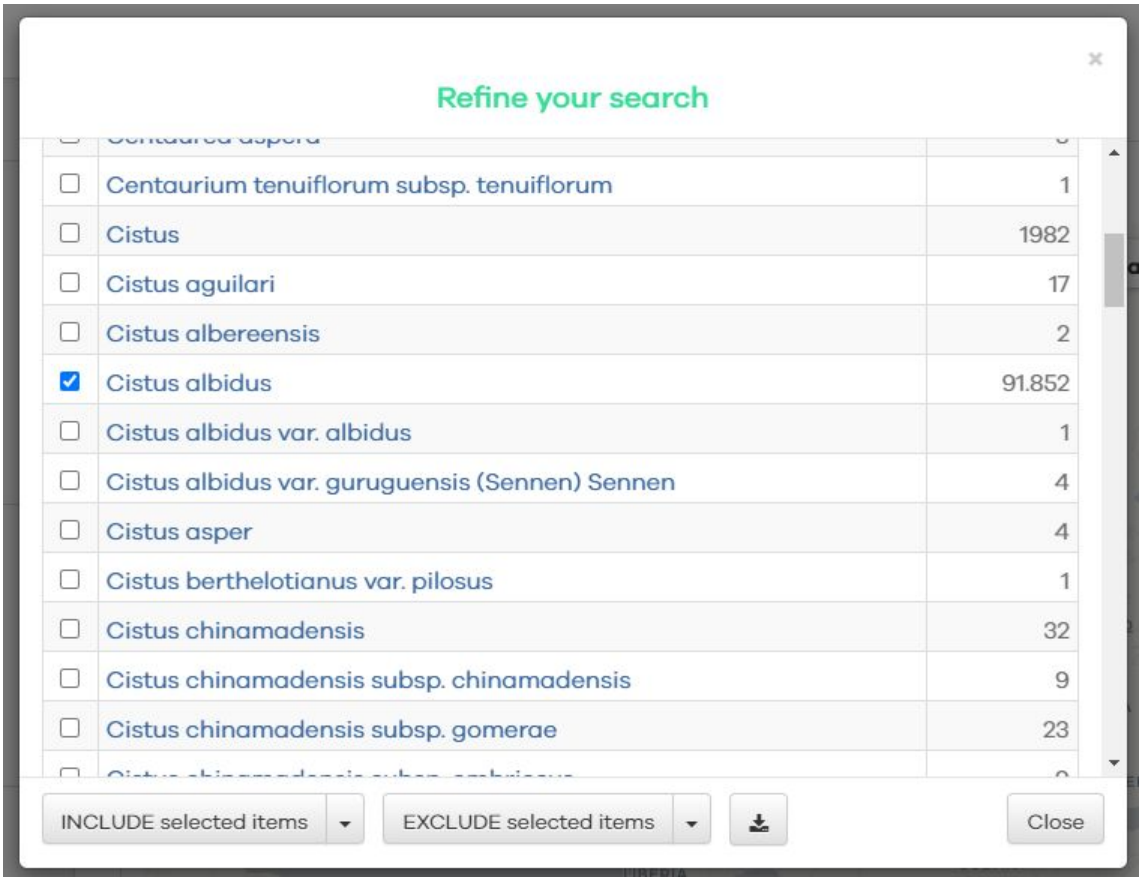
1. Open GBIF.ES Biodiversity Data Portal at https://datos.gbif.es
2. Type ***Cistus*** genus in the search box and click the search button
   A new page will be displayed with the results.
   * Note: numerical results shown in the screenshots do not have to match the result you will get.



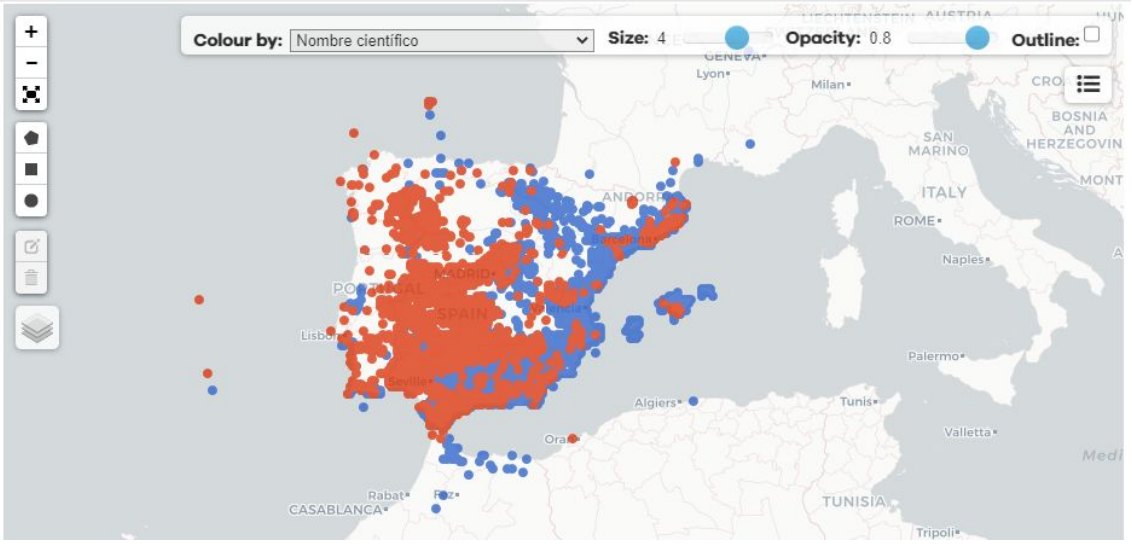
Elements in picture:

1. Shows data search results. They can be visualized in four different ways:
   a. As a list of records
   b. As a distribution map (if records are georeferenced)
   c. As statistics
   d. As images
2. Download button
3. Faceting and filtering area

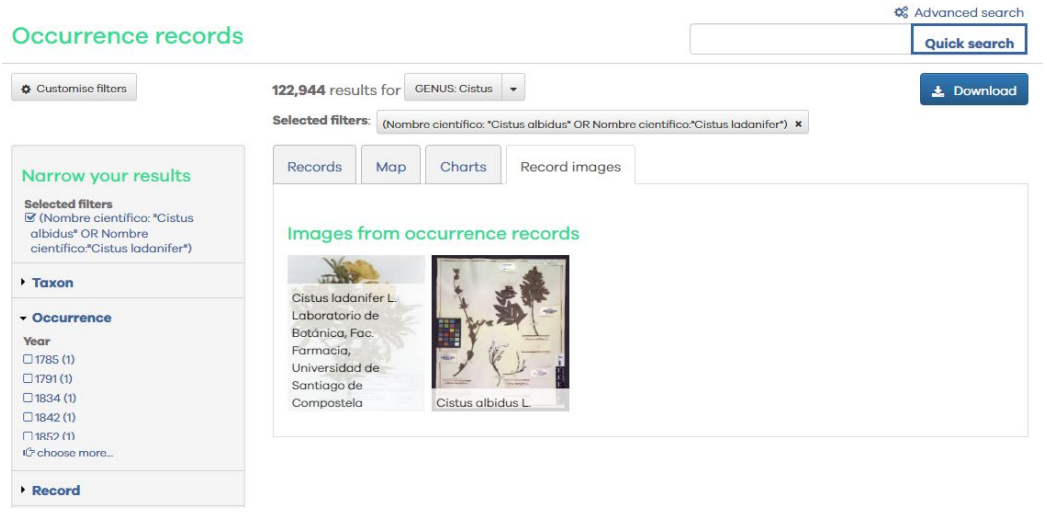
3. Refine your search using facets and filters: in the filtering area, display **taxon** panel, and filter by **Scientific name** by clicking on **choose more…**, then select only the taxa corresponding to ***Cistus ladanifer*** and ***Cistus albidus***. Click on **Include selected items** to apply the filter. A new result will appear.



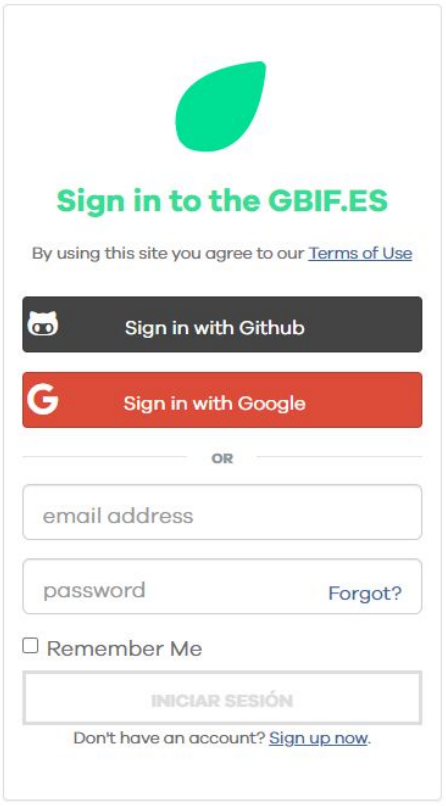
4. **Copy and keep** the search URL so you can use it later on.
5. In the **Map tab**, choose **colour by Scientific Name**. This will allow you to identify by colour the two selected species in the map.



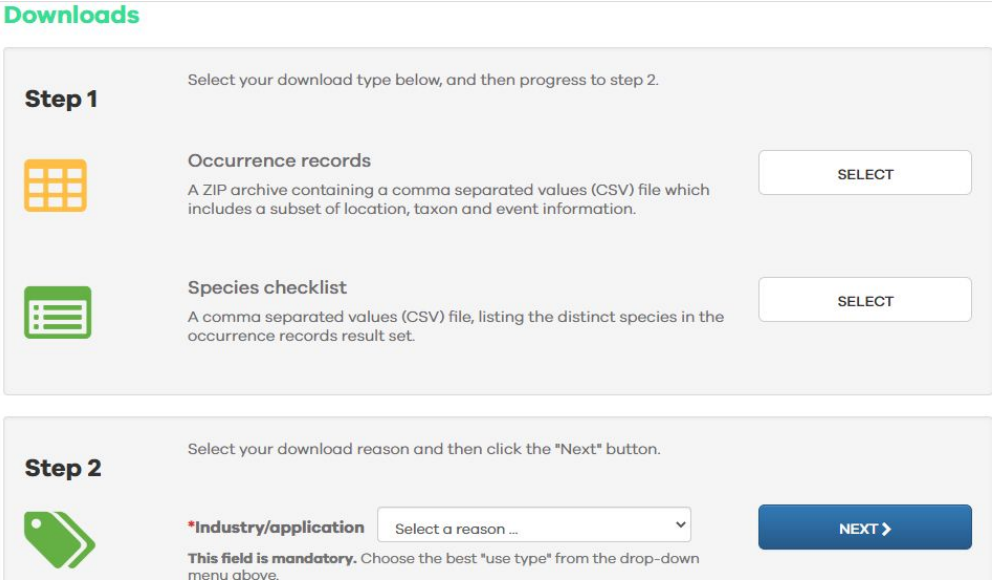
6. Go to the **Record images** tab and explore the images available for these species.



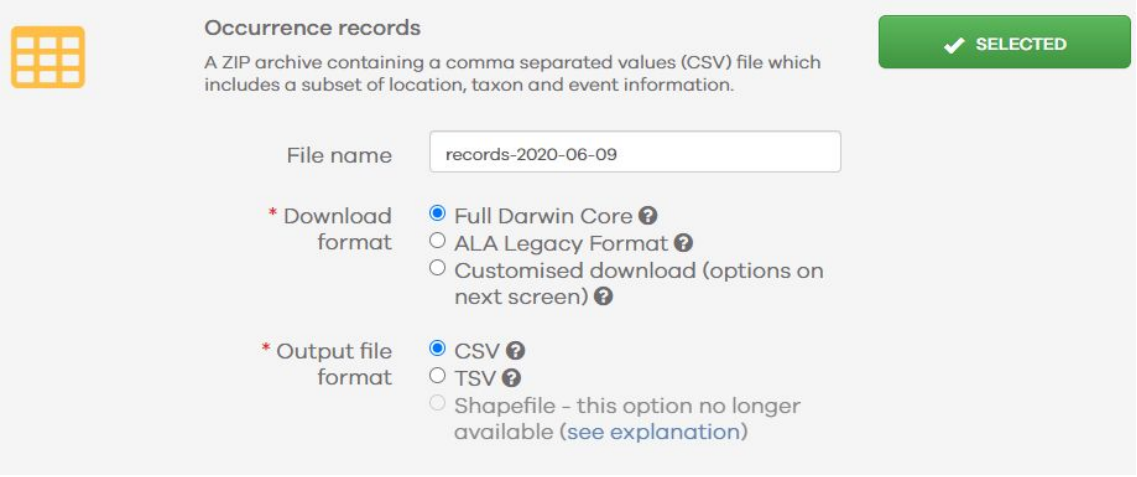
7. Click on the **Download** blue button in the top right corner of the page. If this is the first time you are downloading data from the portal, the following screen will open to create your user account on the platform. Register (using your Github, Google, or email account) and sign in to download the data requested.



8. A new page will open where you must complete basic information in two steps.



- In the first step, you must select the type of download you want to make. In this case, we will select **Occurrence records**, **Full Darwin Core** to download the complete list of records and **CSV** as the output file format (delimited by commas).



- In the second step, you must select the **download reason** by choosing a value from the drop-down menu. Once you have completed it, click on the **Next** button.

9. Check your mailbox, you will receive an email with the subject *GBIF.ES Record Download Completed* (*GBIF.ES Descarga de registros completada - records-date*) with the URL to access the download package. The download package is a **.zip file** containing the following files:

   - **Records-(*date-of-download*).csv**: contains the set of records that meet the search criteria of previous steps.

- **Citations.csv**: contains the list of all the datasets and institutions that have contributed their data to the downloaded file. For each dataset and institution the UID (identifier within the portal), Names, DOI, Citation, Rights and Number of records in the download are provided.
- **Headings.csv**: list of all the downloaded fields including their translation, equivalence with the Darwin Core standard term and description.
- **Readme.html**: information about the download and URL with the search performed. List of the providers that have provided the data for the download.

Results

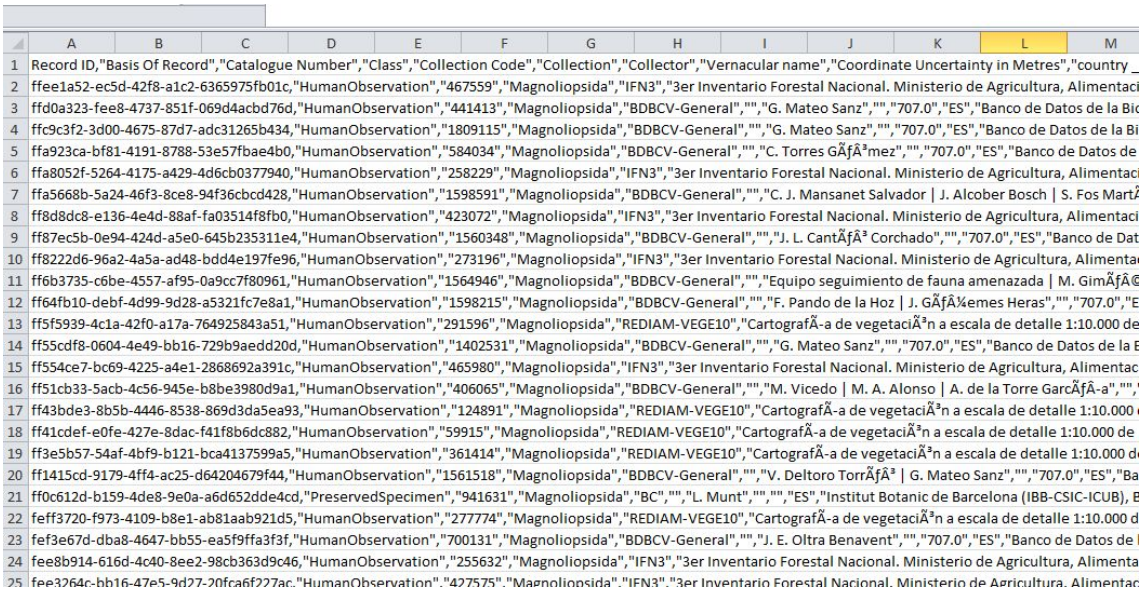
1. Copy the URL with the search and filters applied.
2. Save the downloaded file somewhere in your computer.
   * Note If you have not been able to download the file directly from the portal, you can do so using this URL:
   https://registros-ws.gbif.es/biocache-download/4170fc0e-49d3-31aa-9514-e4337d6932c7/1595577310294/records-2020-07-24.zip

2. Importing downloaded data to Excel

Before we start

In this exercise, we will explain how to import the records.csv file into an Excel sheet to make it more readable.

We will move from this view:



	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Record ID,"Basis Of Record","Catalogue Number","Class","Collection Code","Collection","Collector","Vernacular name","Coordinate Uncertainty in Metres","country _												
2	ffee1a52-ec5d-42f8-a1c2-6365975fb01c,"HumanObservation","467559","Magnoliopsida","IFN3","3er Inventario Forestal Nacional. Ministerio de Agricultura, Alimentaci												
3	ffd0a323-fee8-4737-851f-069d4acbd76d,"HumanObservation","441413","Magnoliopsida","BDBCV-General","","G. Mateo Sanz","","707.0","ES","Banco de Datos de la Bio												
4	ffc9c3f2-3d00-4675-87d7-adc31265b434,"HumanObservation","1809115","Magnoliopsida","BDBCV-General","","G. Mateo Sanz","","707.0","ES","Banco de Datos de la Bi												
5	ffa923ca-bf81-4191-8788-53e57fbae4b0,"HumanObservation","584034","Magnoliopsida","BDBCV-General","","C. Torres GÃƒÂ³mez","","707.0","ES","Banco de Datos de												
6	ffa8052f-5264-4175-a429-4d6cb0377940,"HumanObservation","258229","Magnoliopsida","IFN3","3er Inventario Forestal Nacional. Ministerio de Agricultura, Alimentaci												
7	ffa5668b-5a24-46f3-8ce8-94f36cbcd428,"HumanObservation","1598591","Magnoliopsida","BDBCV-General","","C. J. Mansanet Salvador | J. Alcober Bosch | S. Fos MartÃ												
8	ff8d8dc8-e136-4e4d-88af-fa03514f8fb0,"HumanObservation","423072","Magnoliopsida","IFN3","3er Inventario Forestal Nacional. Ministerio de Agricultura, Alimentaci												
9	ff87ec5b-0e94-424d-a5e0-645b235311e4,"HumanObservation","1560348","Magnoliopsida","BDBCV-General","","J. L. CantÃƒÂ³ Corchado","","707.0","ES","Banco de Dat												
10	ff8222d6-96a2-4a5a-ad48-bdd4e197fe96,"HumanObservation","273196","Magnoliopsida","IFN3","3er Inventario Forestal Nacional. Ministerio de Agricultura, Alimentac												
11	ff6b3735-c6be-4557-af95-0a9cc7f80961,"HumanObservation","1564946","Magnoliopsida","BDBCV-General","","Equipo seguimiento de fauna amenazada | M. GimÃƒÂ©												
12	ff64fb10-debf-4d99-9d28-a5321fc7e8a1,"HumanObservation","1598215","Magnoliopsida","BDBCV-General","","F. Pando de la Hoz | J. GÃƒÂ¼emes Heras","","707.0","E												
13	ff5f5939-4c1a-42f0-a17a-764925843a51,"HumanObservation","291596","Magnoliopsida","REDIAM-VEGE10","CartografÃ-a de vegetaciÃ³n a escala de detalle 1:10.000 de												
14	ff55cdf8-0604-4e49-bb16-729b9aedd20d,"HumanObservation","1402531","Magnoliopsida","BDBCV-General","","G. Mateo Sanz","","707.0","ES","Banco de Datos de la E												
15	ff554ce7-bc69-4225-a4e1-2868692a391c,"HumanObservation","465980","Magnoliopsida","IFN3","3er Inventario Forestal Nacional. Ministerio de Agricultura, Alimentac												
16	ff51cb33-5acb-4c56-945e-b8be3980d9a1,"HumanObservation","406065","Magnoliopsida","BDBCV-General","","M. Vicedo | M. A. Alonso | A. de la Torre GarcÃƒÂ-a",""												
17	ff43bde3-8b5b-4446-8538-869d3da5ea93,"HumanObservation","124891","Magnoliopsida","REDIAM-VEGE10","CartografÃ-a de vegetaciÃ³n a escala de detalle 1:10.000												
18	ff41cdef-e0fe-427e-8dac-f41f8b6dc882,"HumanObservation","59915","Magnoliopsida","REDIAM-VEGE10","CartografÃ-a de vegetaciÃ³n a escala de detalle 1:10.000 de												
19	ff3e5b57-54af-4bf9-b121-bca4137599a5,"HumanObservation","361414","Magnoliopsida","REDIAM-VEGE10","CartografÃ-a de vegetaciÃ³n a escala de detalle 1:10.000 d												
20	ff1415cd-9179-4ff4-ac25-d64204679f44,"HumanObservation","1561518","Magnoliopsida","BDBCV-General","","V. Deltoro TorrÃƒÂ³ | G. Mateo Sanz","","707.0","ES","Ba												
21	ff0c612d-b159-4de8-9e0a-a6d652dde4cd,"PreservedSpecimen","941631","Magnoliopsida","BC","","L. Munt","","","ES","Institut Botanic de Barcelona (IBB-CSIC-ICUB), B												
22	feff3720-f973-4109-b8e1-ab81aab921d5,"HumanObservation","277774","Magnoliopsida","REDIAM-VEGE10","CartografÃ-a de vegetaciÃ³n a escala de detalle 1:10.000 d												
23	fef3e67d-dba8-4647-bb55-ea5f9ffa3f3f,"HumanObservation","700131","Magnoliopsida","BDBCV-General","","J. E. Oltra Benavent","","707.0","ES","Banco de Datos de												
24	fee8b914-616d-4c40-8ee2-98cb363d9c46,"HumanObservation","255632","Magnoliopsida","IFN3","3er Inventario Forestal Nacional. Ministerio de Agricultura, Alimenta												
25	fee3264c-bb16-47e5-9d27-20fca6f227ac,"HumanObservation","427575","Magnoliopsida","IFN3","3er Inventario Forestal Nacional. Ministerio de Agricultura, Alimentac												

To this one:

	A	B	C	D	E	
1	Record ID	Basis Of Record	Catalogue Number	Class	Collection Code	Collection
2	ffee1a52-ec5d-42f8-a1c2-6365975fb01c	HumanObservation	467559	Magnoliopsida	IFN3	3er Inventario Forestal Nacior
3	ffd0a323-fee8-4737-851f-069d4acbd76d	HumanObservation	441413	Magnoliopsida	BDBCV-General	
4	ffc9c3f2-3d00-4675-87d7-adc31265b434	HumanObservation	1809115	Magnoliopsida	BDBCV-General	
5	ffa923ca-bf81-4191-8788-53e57fbae4b0	HumanObservation	584034	Magnoliopsida	BDBCV-General	
6	ffa8052f-5264-4175-a429-4d6cb0377940	HumanObservation	258229	Magnoliopsida	IFN3	3er Inventario Forestal Nacior
7	ffa5668b-5a24-46f3-8ce8-94f36cbcd428	HumanObservation	1598591	Magnoliopsida	BDBCV-General	
8	ff8d8dc8-e136-4e4d-88af-fa03514f8fb0	HumanObservation	423072	Magnoliopsida	IFN3	3er Inventario Forestal Nacior
9	ff87ec5b-0e94-424d-a5e0-645b235311e4	HumanObservation	1560348	Magnoliopsida	BDBCV-General	
10	ff8222d6-96a2-4a5a-ad48-bdd4e197fe96	HumanObservation	273196	Magnoliopsida	IFN3	3er Inventario Forestal Nacior
11	ff6b3735-c6be-4557-af95-0a9cc7f80961	HumanObservation	1564946	Magnoliopsida	BDBCV-General	
12	ff64fb10-debf-4d99-9d28-a5321fc7e8a1	HumanObservation	1598215	Magnoliopsida	BDBCV-General	
13	ff5f5939-4c1a-42f0-a17a-764925843a51	HumanObservation	291596	Magnoliopsida	REDIAM-VEGE10	Cartografía de vegetación a es
14	ff55cdf8-0604-4e49-bb16-729b9aedd20d	HumanObservation	1402531	Magnoliopsida	BDBCV-General	
15	ff554ce7-bc69-4225-a4e1-2868692a391c	HumanObservation	465980	Magnoliopsida	IFN3	3er Inventario Forestal Nacior
16	ff51cb33-5acb-4c56-945e-b8be3980d9a1	HumanObservation	406065	Magnoliopsida	BDBCV-General	
17	ff43bde3-8b5b-4446-8538-869d3da5ea93	HumanObservation	124891	Magnoliopsida	REDIAM-VEGE10	Cartografía de vegetación a es
18	ff41cdef-e0fe-427e-8dac-f41f8b6dc882	HumanObservation	59915	Magnoliopsida	REDIAM-VEGE10	Cartografía de vegetación a es
19	ff3e5b57-54af-4bf9-b121-bca4137599a5	HumanObservation	361414	Magnoliopsida	REDIAM-VEGE10	Cartografía de vegetación a es
20	ff1415cd-9179-4ff4-ac25-d64204679f44	HumanObservation	1561518	Magnoliopsida	BDBCV-General	
21	ff0c612d-b159-4de8-9e0a-a6d652dde4cd	PreservedSpecimen	941631	Magnoliopsida	BC	
22	feff3720-f973-4109-b8e1-ab81aab921d5	HumanObservation	277774	Magnoliopsida	REDIAM-VEGE10	Cartografía de vegetación a es
23	fef3e67d-dba8-4647-bb55-ea5f9ffa3f3f	HumanObservation	700131	Magnoliopsida	BDBCV-General	
24	fee8b914-616d-4c40-8ee2-98cb363d9c46	HumanObservation	255632	Magnoliopsida	IFN3	3er Inventario Forestal Nacior
25	fee3264c-bb16-47e5-9d27-20fca6f227ac	HumanObservation	427575	Magnoliopsida	IFN3	3er Inventario Forestal Nacior

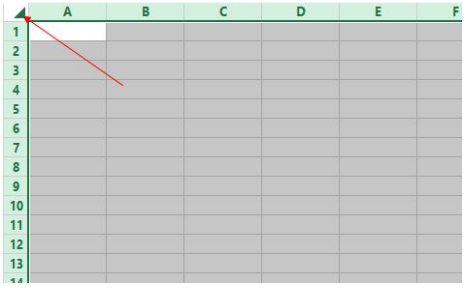
There are three formats for storing text files with potential implementation in table form, which are not the traditional ***Microsoft Office Excel*** ® formats (.xls, .xlsx, etc). These files are **tab-delimited** and **comma-separated.**

- ***Tab separated value (.tsv) files:*** in this format the tab character separates each stored content field.
- ***Tab-delimited text files (.txt)***: in this format the tab character separates each content field stored in a text file.
- ***Comma separated value (.csv) files***: in this format the comma (,) or semicolon (;) character separates each stored content field.

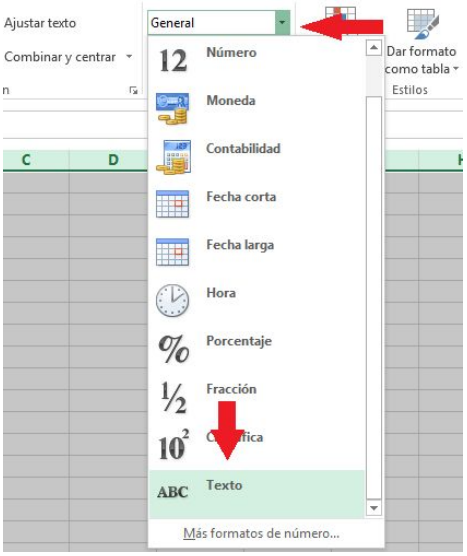
Microsoft Office Excel ® data software provides two ways to correctly import a **.tsv, .txt or .csv** file format.

Exercise

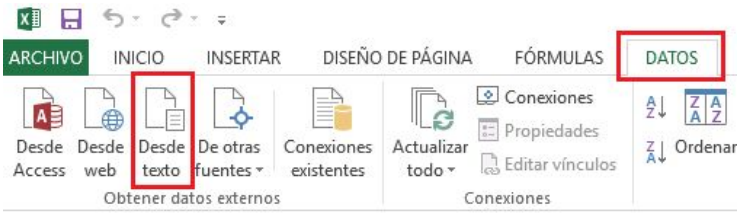
1. Open an Excel blank document and save it as "*Cistus*".
2. Before importing the file, set the general format of the spreadsheet to *Text*. To do this:
   2.1. Click on the upper left corner of the spreadsheet (space between column A and row 1), this will select the entire spreadsheet.



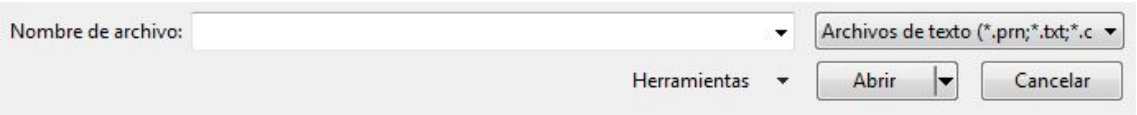
   2.2. When you open a file in Microsoft Office Excel ®, the format *General* is always selected. Click on the drop-down list of the spreadsheet format and at the end of the list and select *Text*.



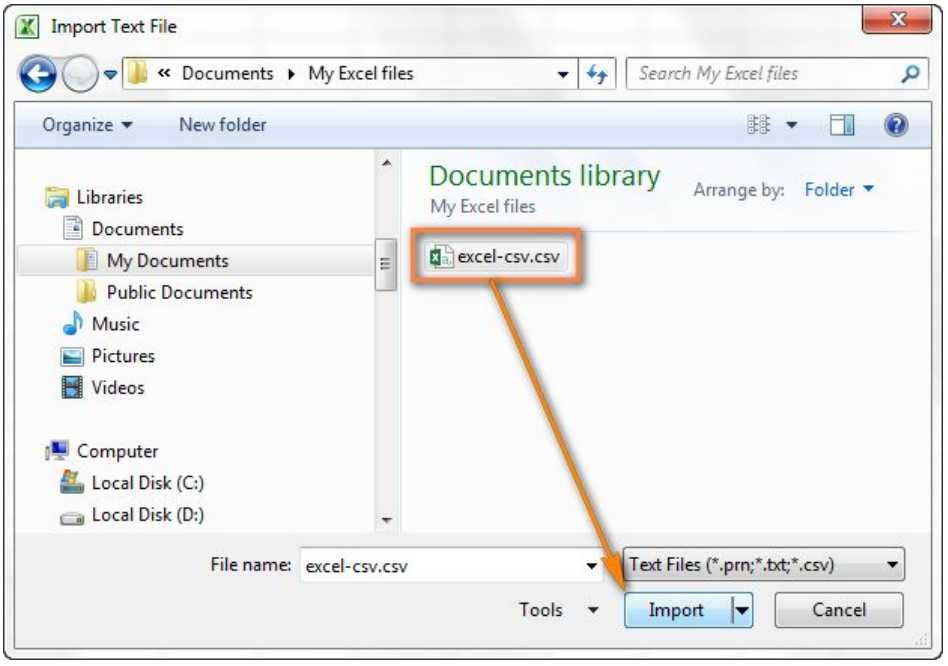
3. From the top menu, click *Data* >> Get *External Data* and choose the source file format *From Text (csv)*.



4. A new dialog box will appear. Select *Text files (*.prn,*.txt,*.csv)* from the drop-down list in the lower right corner.

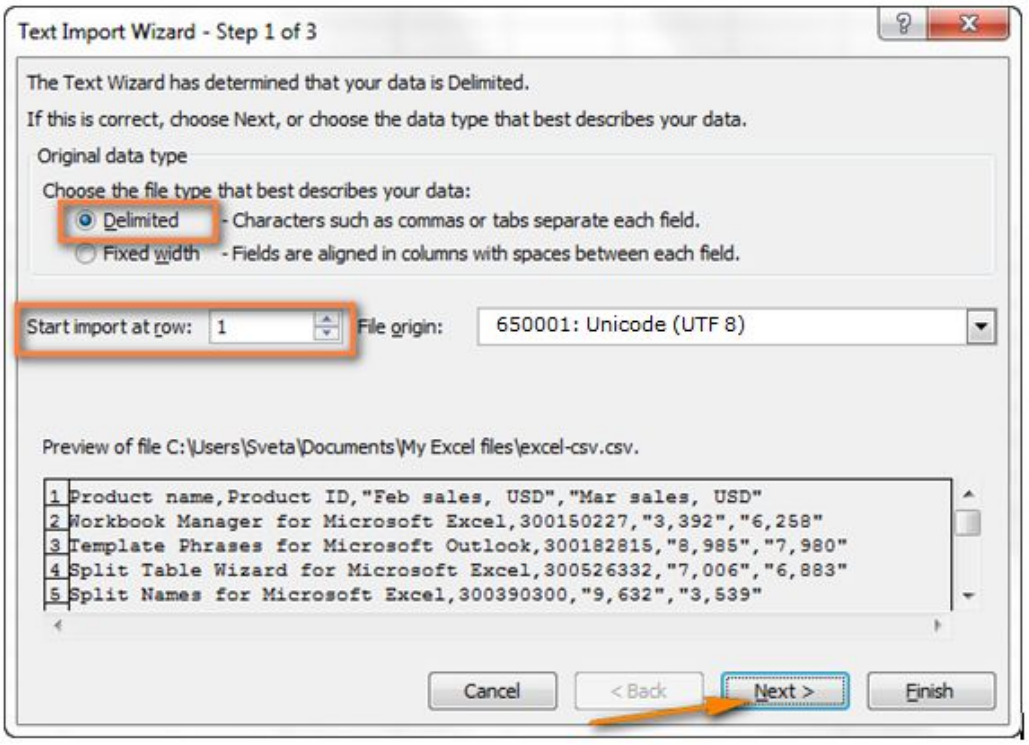


5. Find the **records.CSV** file in your computer and import it.

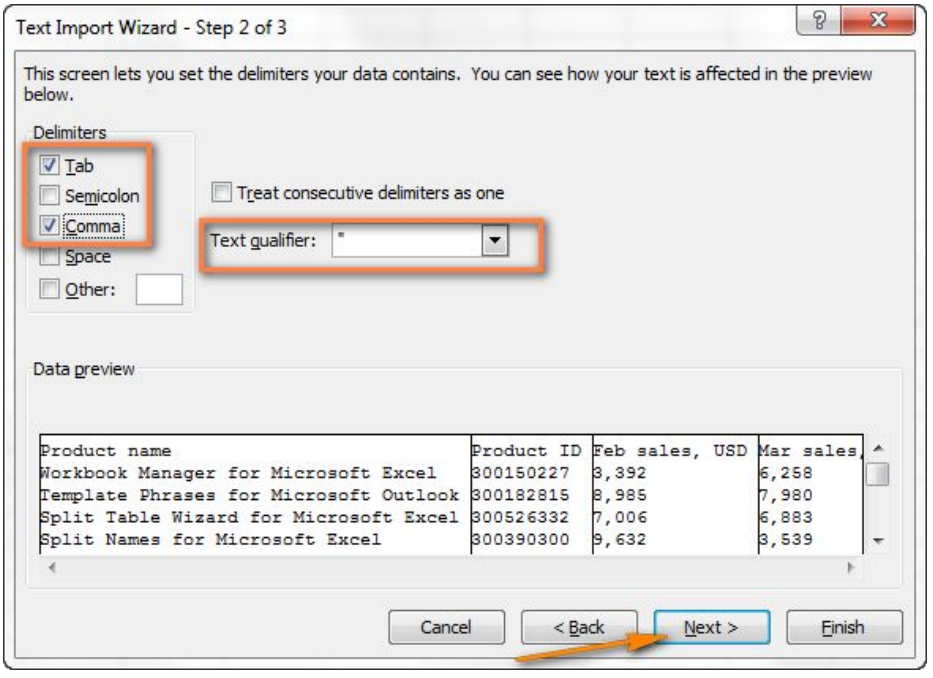


6. Next, the Excel wizard for importing text will open. This wizard must be configured for our file to be adapted correctly. Be sure to follow these steps and leave the options as shown in the image:

6.1. Choose the **file type** and **row number** with the header to start importing the data. Usually you choose *Delimited* and *Row 1*, respectively. The file source must be **Unicode UTF 8** to avoid strange characters. The preview window at the bottom of the wizard displays the first entries of your CSV file. Now click *Next*.

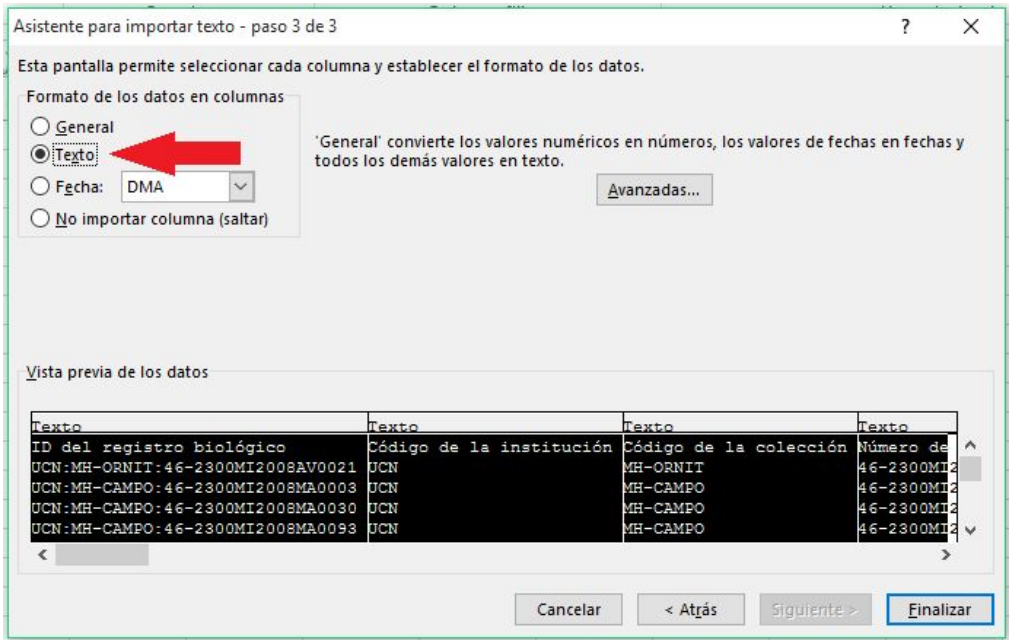


6.2. In this step, select a **Delimiter(s)** and a **Text Qualifie**r. The text qualifier is the character that separates the values in your .csv file. Select *Tab and Comma*.

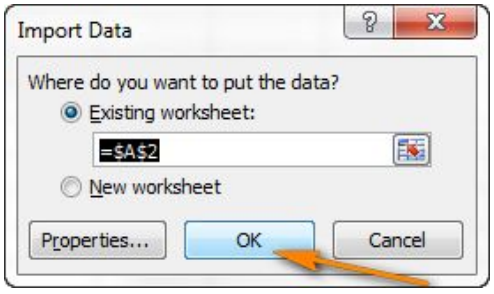


6.3. If you agree with the data preview click on ***Next***.

6.4. In the next step of the wizard, Excel automatically assigns a format to each field to be imported and sometimes this can cause problems with formatting. The recommended practice is to assign type "***Text*** to all fields. Press ***Finish*** when you are satisfied with the view.



6.5. Choose the destination of the imported data, either an existing or a new spreadsheet, and click *OK* to finish importing the CSV file into Excel.



7. Finally, you will get the results in a legible way, with each field easily identifiable.

	C	D	
1	Match Taxon Concept GUID	Scientific Name	Ver
2	urn:lsid:catalogueoflife.org:taxon:2dd15317-4661-11e1-9b0d-e752e483e0da:col20120124	Quercus suber L.	
3	urn:lsid:catalogueoflife.org:taxon:2dd15317-4661-11e1-9b0d-e752e483e0da:col20120124	Quercus suber L.	
4	urn:lsid:catalogueoflife.org:taxon:2dd15317-4661-11e1-9b0d-e752e483e0da:col20120124	Quercus suber L.	
5	urn:lsid:catalogueoflife.org:taxon:2dd15317-4661-11e1-9b0d-e752e483e0da:col20120124	Quercus suber L.	
6	urn:lsid:catalogueoflife.org:taxon:2dd15317-4661-11e1-9b0d-e752e483e0da:col20120124	Quercus suber L.	
7	urn:lsid:catalogueoflife.org:taxon:2dd15317-4661-11e1-9b0d-e752e483e0da:col20120124	Quercus suber L.	
8	urn:lsid:catalogueoflife.org:taxon:2dd15317-4661-11e1-9b0d-e752e483e0da:col20120124	Quercus suber L.	
9	urn:lsid:catalogueoflife.org:taxon:2dd15317-4661-11e1-9b0d-e752e483e0da:col20120124	Quercus suber L.	
10	urn:lsid:catalogueoflife.org:taxon:2dd15317-4661-11e1-9b0d-e752e483e0da:col20120124	Quercus suber L.	
11	urn:lsid:catalogueoflife.org:taxon:2dd15317-4661-11e1-9b0d-e752e483e0da:col20120124	Quercus suber L.	
12	urn:lsid:catalogueoflife.org:taxon:2dd15317-4661-11e1-9b0d-e752e483e0da:col20120124	Quercus suber L.	
13	urn:lsid:catalogueoflife.org:taxon:2dd15317-4661-11e1-9b0d-e752e483e0da:col20120124	Quercus suber L.	
14	urn:lsid:catalogueoflife.org:taxon:2dd15317-4661-11e1-9b0d-e752e483e0da:col20120124	Quercus suber L.	
15	urn:lsid:catalogueoflife.org:taxon:2dd15317-4661-11e1-9b0d-e752e483e0da:col20120124	Quercus suber L.	
16	urn:lsid:catalogueoflife.org:taxon:2dd15317-4661-11e1-9b0d-e752e483e0da:col20120124	Quercus suber L.	
17	urn:lsid:catalogueoflife.org:taxon:2dd15317-4661-11e1-9b0d-e752e483e0da:col20120124	Quercus suber L.	
18	urn:lsid:catalogueoflife.org:taxon:2dd15317-4661-11e1-9b0d-e752e483e0da:col20120124	Quercus suber L.	
19	urn:lsid:catalogueoflife.org:taxon:2dd15317-4661-11e1-9b0d-e752e483e0da:col20120124	Quercus suber L.	
20	urn:lsid:catalogueoflife.org:taxon:2dd15317-4661-11e1-9b0d-e752e483e0da:col20120124	Quercus suber L.	

Results

1. **Save Excel file with adapted records.**
   Result:
   https://drive.google.com/file/d/1R884K1DbhuTvBbgk6PLAgVWOLIaulwpv/view?usp=sharing

3. Advanced Search: batch searching by scientific name

Before we start

We will use the *advanced search* to perform a batch search for scientific names.

Exercise

1. Access the **Advanced Search** by clicking on the **Search** menu.

2. Once here, click on the **Batch taxon Search** tab, which will display a blank field.

3. Enter the following species and click on **Search**:
    - *Cistus albidus*
    - *Cistus clusii*
    - *Cistus crispus*
    - *Cistus ladanifer*
    - *Helianthemum umbellatum*

4. Check the results.

Results
https://registros.gbif.es/occurrences/search?q=qid%3A1591784650378&lang=en

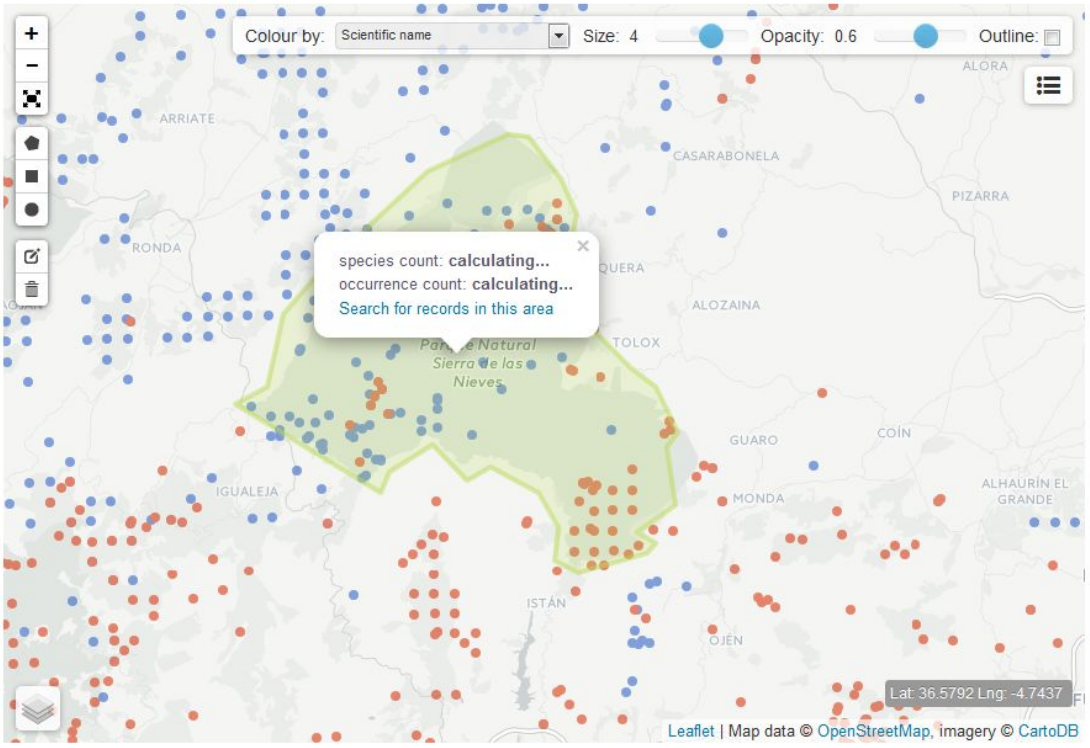
4. Spatial search: drawing polygons by hand

Before we start

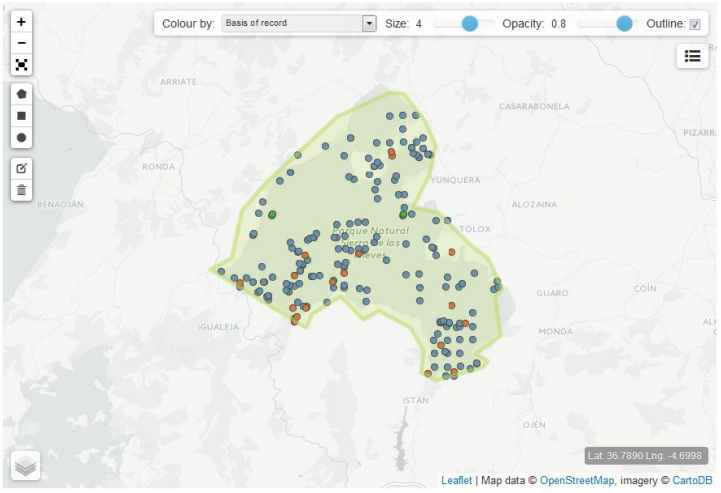
We will perform a data search through the GBIF.ES Biodiversity Data Portal using the georeferenced data tool. We will draw an area using a polygon to select records within the area. We will see how to save our polygon to use it later.

Exercise

1. Copy the URL saved in exercise 1 and paste it in a web browser.
2. Go to the **Map** tab and zoom in on an area of your choice (be sure to select an area with record points). You can use the Layer tool to display the map in basic view (Minimal), road map (Road), physical map (Terrain) or satellite view (Satellite).
3. Draw a polygon to delimit the area of your interest. To close the form, click on the first point of the polygon.
4. The portal will calculate the number of species and records within the selected area. Click on **Search for records in this area** to apply the selection.
   Note: we recommend not using many nodes in the polygon to speed up the search process.



5. As a result, you will get a new filter with the records included in the selected area. All records can be downloaded by clicking on the **Download** blue button, on top right of the map.



6. Click on **Download WKT** (a new button that has been activated) to save the polygon. The polygon is downloaded as a .txt file that includes a string with coordinate pairs (x,y) representing each node of the drawn polygon. **Save this file** or copy the text into a document, we will use it later on (you will learn how to do this in the next exercise).

```
POLYGON((-8.869378566741943 39.61626788999701,-8.913323879241943 39.55064761909318,-
8.957269191741943 39.47436547486121,-8.971002101898193 39.40754990812657,-
8.966882228851318 39.34810449643775,-8.921563625335693 39.36721747059305,-
8.889977931976318 39.413916056733086,-8.824059963226318 39.420281624085696,-
8.836419582366943 39.44361706435004,-8.766381740570068 39.44891948347229,-
8.737542629241943 39.45528185347343,-8.719689846038818 39.431950321168635,-
8.681237697601317 39.44361706435004,-8.653771877288818 39.480725519034394,-
8.619439601898193 39.50827899034114,-8.572747707366943 39.53793974517628,-
8.570001125335693 39.56970506644249,-8.593347072601318 39.577114881737586,-
8.637292385101318 39.58240712203527,-8.657891750335693 39.55382422395819,-
8.677117824554443 39.536880650643056,-8.725183010101318 39.55911824217184,-
8.741662502288817 39.56864645674722,-8.743035793304443 39.59933957529531,-
8.773248195648193 39.61944148822782,-8.806207180023193 39.62155713953984,-
8.846032619476318 39.617325772242175,-8.869378566741943 39.61626788999701))
```

Results

1. ***Document with WKT polygon***
   https://drive.google.com/open?id=19gv3I7fv81bFAGjrfg_uujOPztuwEcqA

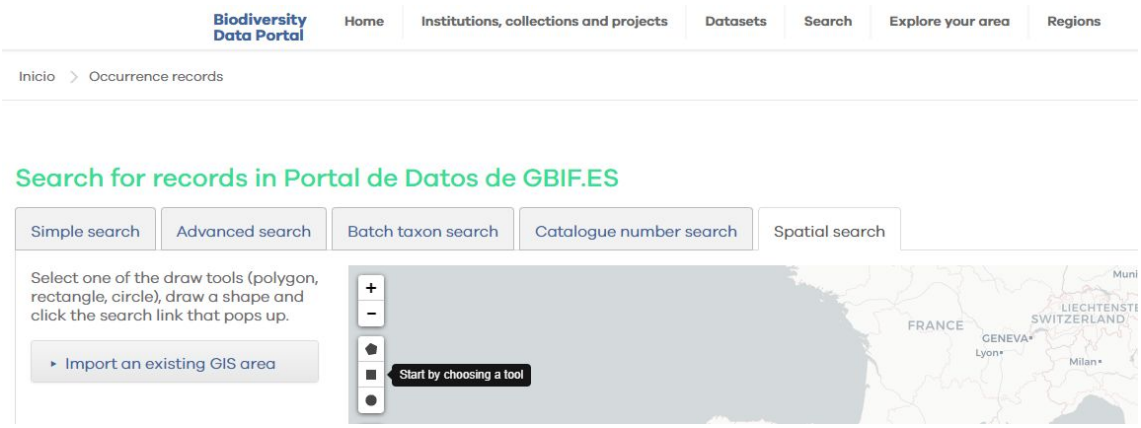
5. Spatial search: importing polygons (WKT file)

Before we start

We will perform a data search through the GBIF.ES Biodiversity Data Portal using a spatial search. The objective of this activity is to learn how to import a WKT polygon into the portal to search for all records included in the area.

Exercise

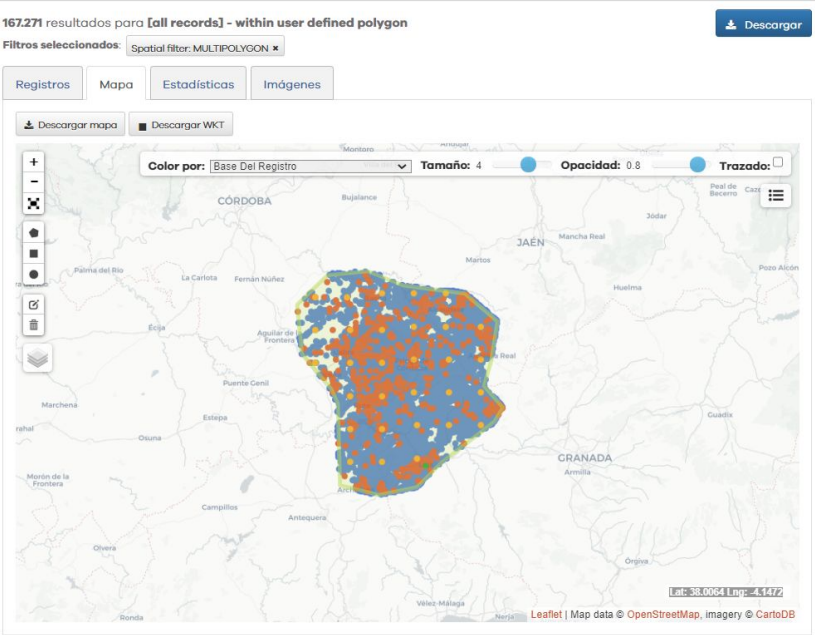
1. Open the **Spatial Search** (Advanced Search → Spatial Search tab) or go to https://registros.gbif.es/?lang=en#tab_spatialSearch



2. Display the text **Import an existing GIS area**. Copy and paste the following text string - that corresponds to a WKT polygon in Andalucia region - in the box that appears below.

MULTIPOLYGON(((-4.491485645994543
37.68153796866609,-4.351409962400794
37.6924056796272,-4.227813770994544
37.65327446826306,-4.016326954588294
37.63152599094387,-3.9037170913070436
37.555356191941605,-3.9256897475570436
37.446407012606706,-3.950408985838294
37.378778716331794,-3.884491017088294
37.31982691784368,-3.914703419432044
37.28050000794494,-4.095977833494544
37.16896213883032,-4.181121876463293
37.101084034199,-4.312957813963294
37.079174883779075,-4.447540333494544
37.10546510418985,-4.455780079588294
37.33074740972834,-4.477752735838294
37.3700480376407,-4.579376270994544
37.46602959572197,-4.595855763182044
37.601067427141594,-4.491485645994543
37.68153796866609)))

3. Click on **Add to map**.
4. A dialog box will appear in the map showing the species and records totals found within the area. Click on **Search for records in this area** to see the results.



5. Press the **Download** blue button to download records.
6. To download records follow the steps explained in exercise 1.
7. Find the resulting file in the Downloads folder in your computer.
8. If you wish, you can import the records found in the .csv file into an Excel sheet by following the steps in exercise 2.

Results

1. **File with the downloaded data.**
   https://registros-ws.gbif.es/biocache-download/4170fc0e-49d3-31aa-9514-e4337d6932c7/1595927252694/records-2020-07-28.zip

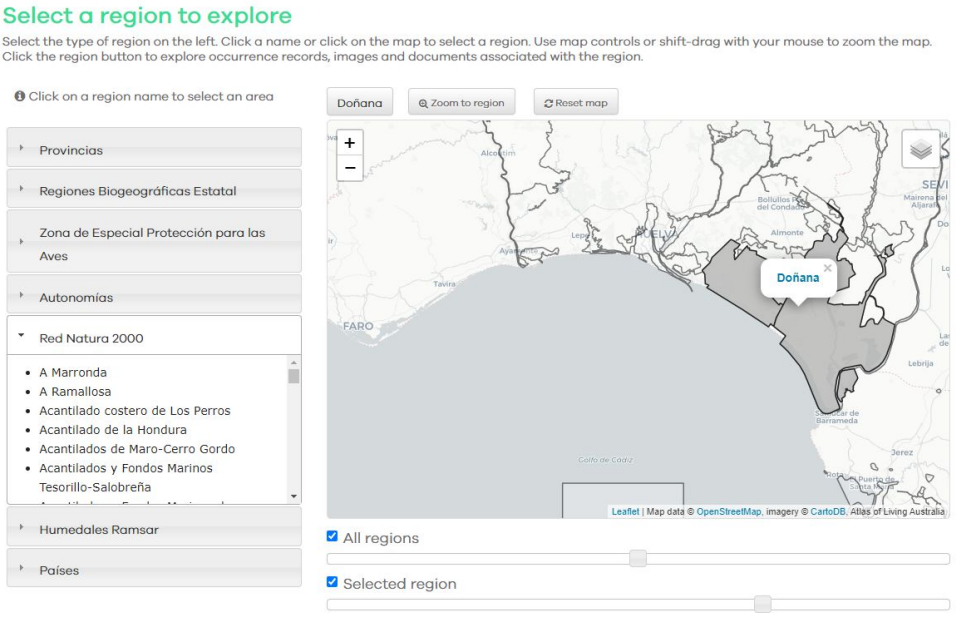
6. Regions Module

Before we start

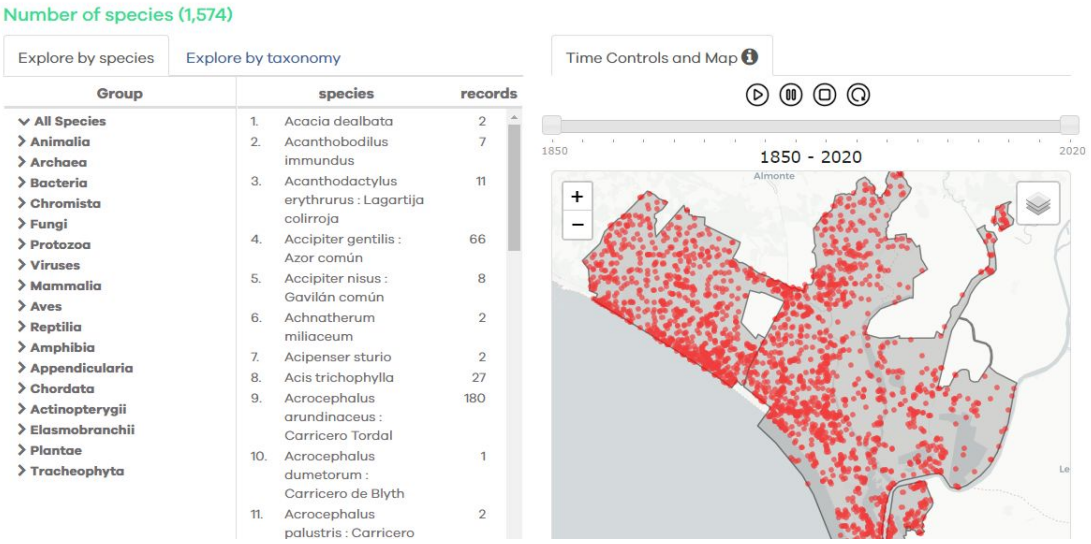
In this exercise, we will explore the **Regions** module of the GBIF.ES Biodiversity Data Portal where we will find pre-defined polygons that refer to different geographic areas: Spanish Provinces, Spanish Biogeographic Regions, Special Protection Areas for Birds, Spanish Autonomies, Natura 2000 Network Sites, Ramsar Wetlands and Countries. In this exercise, we will explore how many records and species of birds there are available for Doñana Natura 2000 site.

Exercise

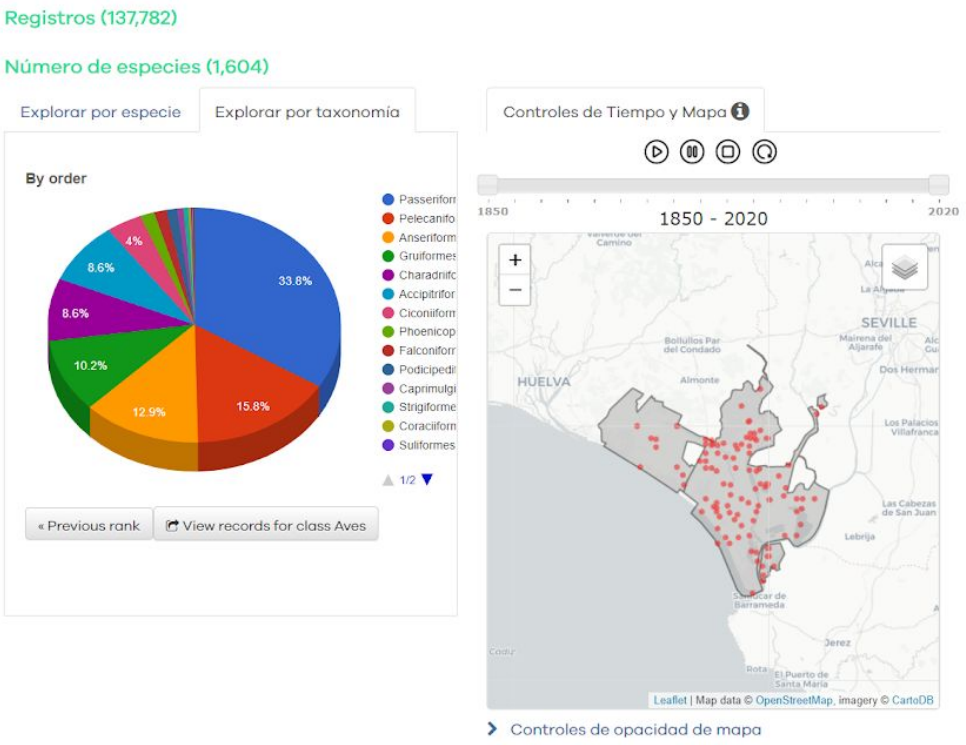
1. Click on **Regions** at the GBIF.ES Biodiversity Data Portal home page menu or go to https://regiones.gbif.es/?lang=en.
2. In the Red Natura 2000 tab, select *Doñana* and then click ***Doñana*** in the dialog box that will appear on the map (you can also make the selection by just clicking on the map).



The Spanish Atlas will display all species recorded for that site, grouped by their higher taxonomic group. When exploring a taxonomic group or a particular species, all records belonging to the selection are highlighted for detailed exploration.



3. We will open the tab **Explore by taxonomy** and we will click on the graph until we reach birds taxa (Animalia → Chordata→ Birds). Once in the taxon Birds, select the button **View records for class Birds** to display the list of records available for this taxon.



4. You can download the results as in the previous cases.

Results

1. **File with downloaded data**
   https://registros-ws.gbif.es/biocache-download/4170fc0e-49d3-31aa-9514-e4337d6932c7/1595855852495/records-2020-07-27.zip