

## Find and Format Species Data from GBIF: How to format GBIF species data for Maxent

There are many sources of Species' data available through web services. Below is an example of how you would download and format data for a species through the GBIF portal.

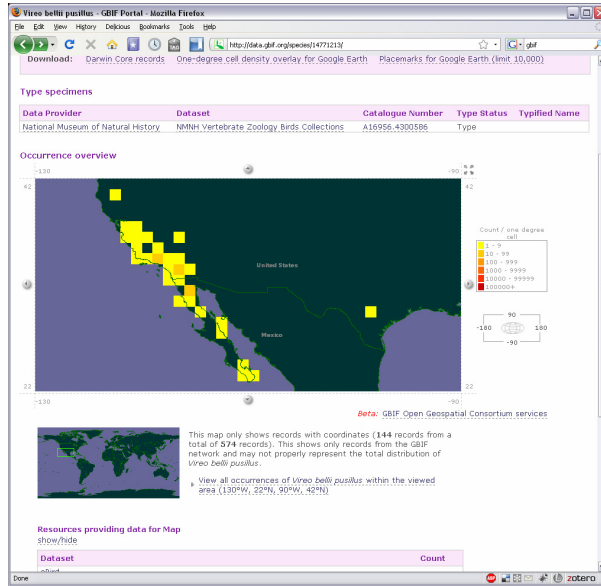
1. To access GBIF, go to <http://www.gbif.org>.



2. Choose **Data > Search** and for this example, we will search for: **Vireo bellii pusillus**, the Least Bell's Vireo, currently listed on California's endangered species list.



3. Click on the species name at the top of the screen. You will see a map that highlights the distribution of data available for the species.



4. Click “View all occurrences of *Vireo bellii pusillus* within the viewed area” and you will be brought to a download page. Here you can see a sample of the results listed on the page.

5. Click on the Download: **Spreadsheet of Results** link to download the data as a table.

Occurrence search - Table view - Classification includes Subspecies: *Vireo bellii pusillus* - Bounding box is 130.0°W, 22.0°N, 90.0°W, 42.0°N

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Occurrence search - Table view

Please add filters and click Search to perform a search for occurrences records. Specify more filters to narrow your search to get more accurate results for the species, area or time period that is of interest.

**Actions**

View: Matching records as table Matching records on map

Specify: Data providers to be included in search Countries to be included in search

Download: Spreadsheet of results Darwin core (maximum 100,000) Google Earth (maximum 50,000) Species in results

Create: New! Niche Model

**Your current search**

Classification includes Subspecies: *Vireo bellii pusillus*

Bounding box is 130.0°W, 22.0°N, 90.0°W, 42.0°N

Change your current search

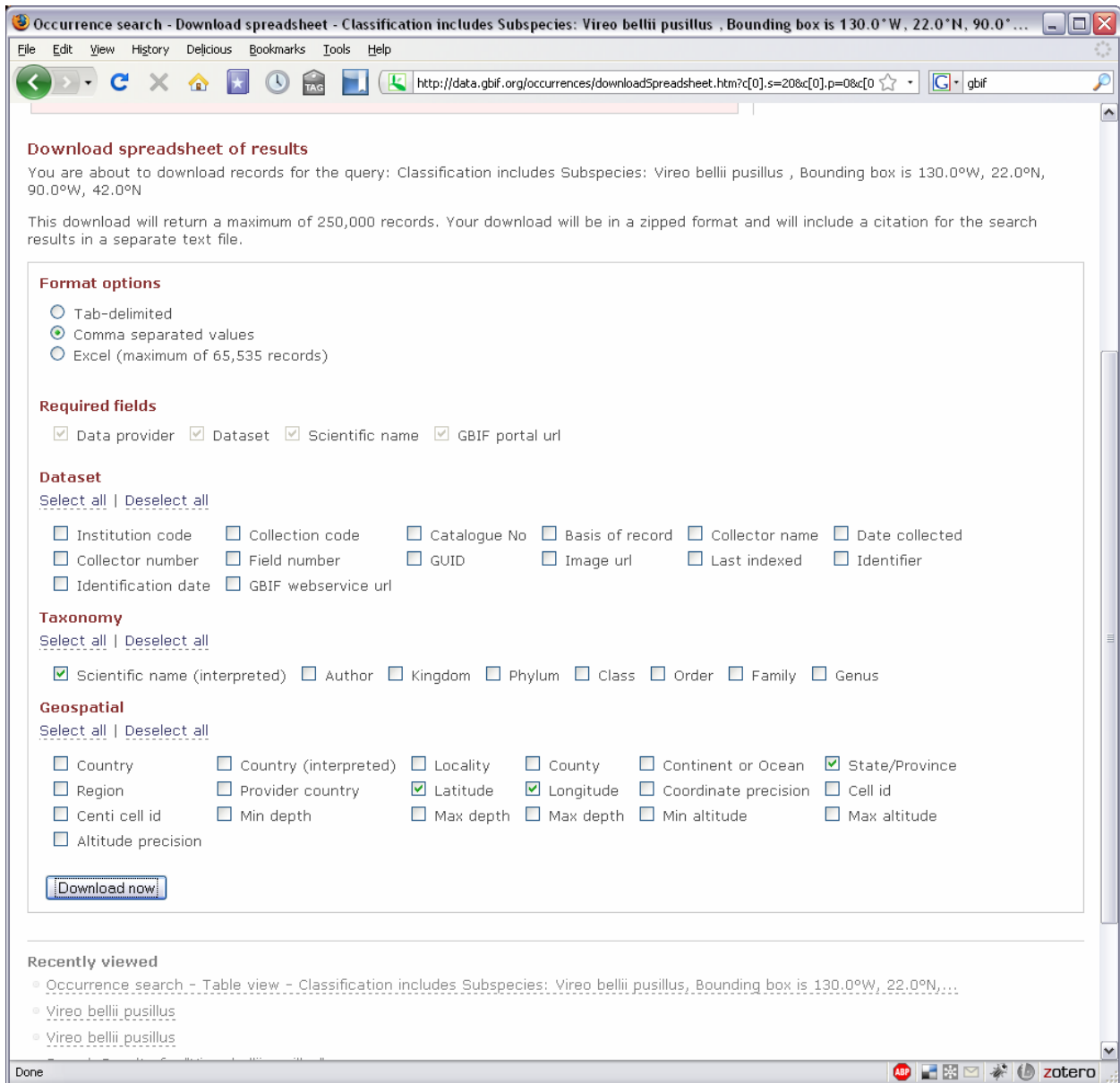
**Table of results**

Displaying 1 to 20. [ First / Prev ] 1, 2, 3, 4, 5, 6 [ Next ]

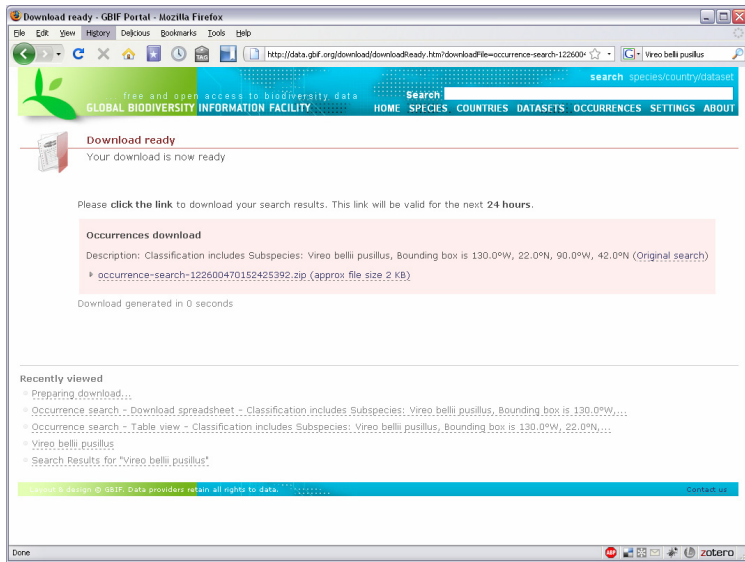
Scientific Name	Dataset	Institution Code	Collection Code	Catalogue Number	Basis of Record	Date	Coordinates	Country
<i>Vireo bellii pusillus</i>	Terrestrial vertebrate specimens	MVZ	Bird	3601	Specimen	27/04/1908	32.64°N, 116.7799°W	View...
<i>Vireo bellii pusillus</i>	Terrestrial vertebrate specimens	MVZ	Bird	3602	Specimen	28/04/1908	32.64°N, 116.7799°W	View...
<i>Vireo bellii pusillus</i>	Terrestrial vertebrate specimens	MVZ	Bird	3603	Specimen	29/04/1908	32.64°N, 116.7799°W	View...
<i>Vireo bellii pusillus</i>	Terrestrial vertebrate specimens	MVZ	Bird	3604	Specimen	20/05/1908	32.64°N, 116.7799°W	View...
<i>Vireo bellii pusillus</i>	Terrestrial vertebrate specimens	MVZ	Bird	4249	Specimen	23/04/1862	32.7324°N, 117.1119°W	View...
<i>Vireo bellii pusillus</i>	Terrestrial vertebrate specimens	MVZ	Bird	8294	Specimen	24/05/1909	32.97°N, 116.36°W	View...
<i>Vireo bellii pusillus</i>	Terrestrial vertebrate specimens	MVZ	Bird	8295	Specimen	29/05/1909	32.97°N, 116.36°W	View...
<i>Vireo bellii pusillus</i>	Terrestrial vertebrate specimens	MVZ	Egg	602	Specimen	28/05/1909	32.97°N, 116.36°W	View...

6. In the following page, you can select the format that you would like to receive the data in, for maxent we will use **Comma separated values**.

7. Next, you can choose from a variety of different fields that are available for the data. You can use all of these fields to have more information, but for this exercise, we will only choose **Scientific name, Latitude, and Longitude** as these are the three fields necessary to run maxent. We can also choose **State/Province** so that we can be sure that the data covers California.



8. Once the download is complete, you will have to unzip the file. Using the free utility WinRAR, you can right click on the zip file and choose “Extract Here” and the csv file will be added to the current folder.



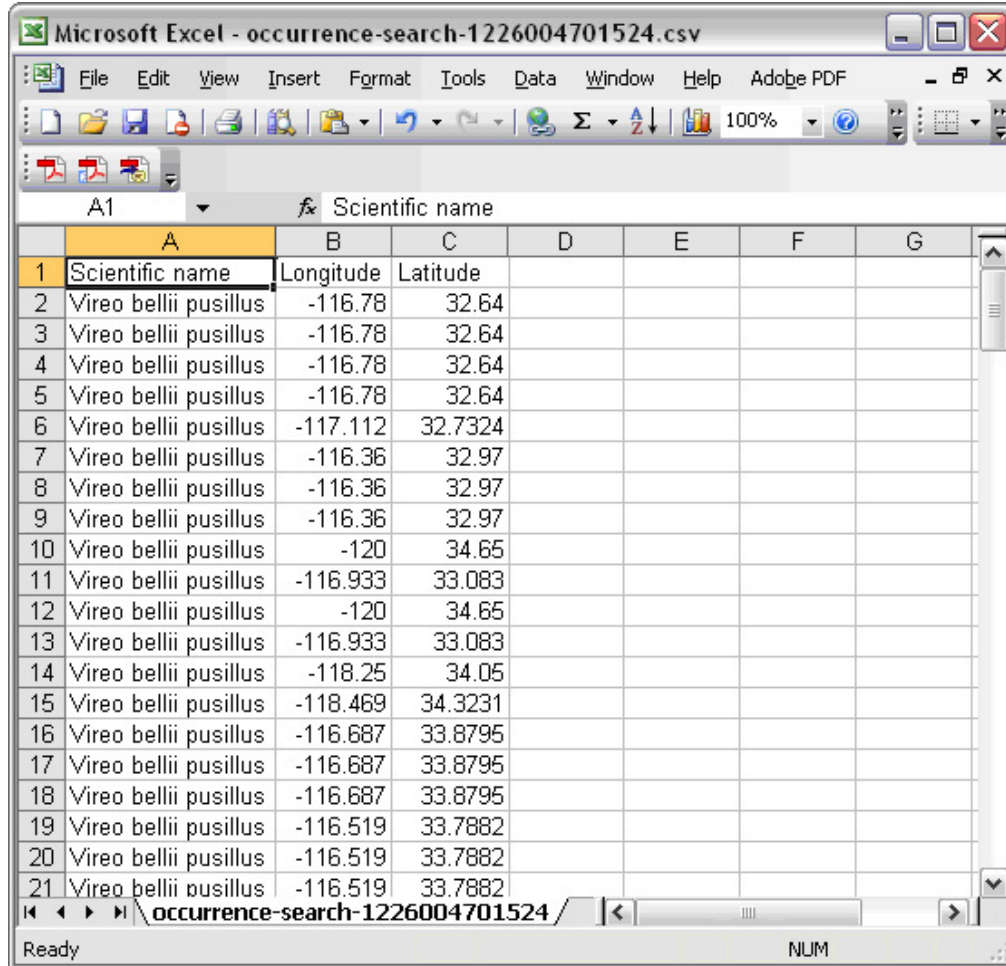
9. Next, we will open the csv file in excel for some minor formatting. In excel, choose **File > Open**. Be sure to set the Files of Type to csv to read the file.

10. To prepare the data for maxent, we can first sort by state and remove the point that do not fall in California. Then delete the columns for all but **Scientific Name**, **Latitude**, and **Longitude**.

	A	B	C	D	E	F	G	H	I	J	K	L
1	Data provider	Dataset	Scientific name	Scientific name	State/Province	Latitude	Longitude	GBIF portal url				
2	Museum of Terrestrial	Vireo bellii	Vireo bellii	California	32.64	-116.78	http://data.gbif.org/occurrences/38501102					
3	Museum of Terrestrial	Vireo bellii	Vireo bellii	California	32.64	-116.78	http://data.gbif.org/occurrences/38501104					
4	Museum of Terrestrial	Vireo bellii	Vireo bellii	California	32.64	-116.78	http://data.gbif.org/occurrences/38501108					
5	Museum of Terrestrial	Vireo bellii	Vireo bellii	California	32.64	-116.78	http://data.gbif.org/occurrences/38501110					
6	Museum of Terrestrial	Vireo bellii	Vireo bellii	California	32.7324	-117.112	http://data.gbif.org/occurrences/38501119					
7	Museum of Terrestrial	Vireo bellii	Vireo bellii	California	32.97	-116.36	http://data.gbif.org/occurrences/38501121					
8	Museum of Terrestrial	Vireo bellii	Vireo bellii	California	32.97	-116.36	http://data.gbif.org/occurrences/38501123					
9	Museum of Terrestrial	Vireo bellii	Vireo bellii	California	32.97	-116.36	http://data.gbif.org/occurrences/38506844					
10	Museum of Terrestrial	Vireo bellii	Vireo bellii	Baja Calif	23.45	-110.217	http://data.gbif.org/occurrences/38501221					
11	Museum of Terrestrial	Vireo bellii	Vireo bellii	Baja Calif	30.7197	-116.018	http://data.gbif.org/occurrences/38501266					
12	Museum of Terrestrial	Vireo bellii	Vireo bellii	Baja Calif	30.7197	-116.018	http://data.gbif.org/occurrences/38501270					

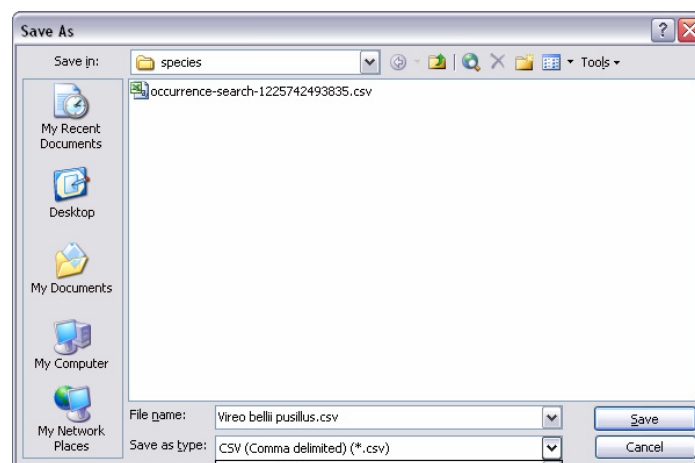
11. Lastly, we must swap the Longitude and Latitude columns, as maxent requires the data format specifically ordered to species name, x (long), y (lat).

12. Save the file as a .csv, and it will be ready for use in Maxent!



The screenshot shows a Microsoft Excel window titled "Microsoft Excel - occurrence-search-1226004701524.csv". The spreadsheet contains the following data:

	A	B	C	D	E	F	G
1	Scientific name	Longitude	Latitude				
2	Vireo bellii pusillus	-116.78	32.64				
3	Vireo bellii pusillus	-116.78	32.64				
4	Vireo bellii pusillus	-116.78	32.64				
5	Vireo bellii pusillus	-116.78	32.64				
6	Vireo bellii pusillus	-117.112	32.7324				
7	Vireo bellii pusillus	-116.36	32.97				
8	Vireo bellii pusillus	-116.36	32.97				
9	Vireo bellii pusillus	-116.36	32.97				
10	Vireo bellii pusillus	-120	34.65				
11	Vireo bellii pusillus	-116.933	33.083				
12	Vireo bellii pusillus	-120	34.65				
13	Vireo bellii pusillus	-116.933	33.083				
14	Vireo bellii pusillus	-118.25	34.05				
15	Vireo bellii pusillus	-118.469	34.3231				
16	Vireo bellii pusillus	-116.687	33.8795				
17	Vireo bellii pusillus	-116.687	33.8795				
18	Vireo bellii pusillus	-116.687	33.8795				
19	Vireo bellii pusillus	-116.519	33.7882				
20	Vireo bellii pusillus	-116.519	33.7882				
21	Vireo bellii pusillus	-116.519	33.7882				



## RS/GIS Quick Start Guides

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Version: Original document was created by GIF (2008)

