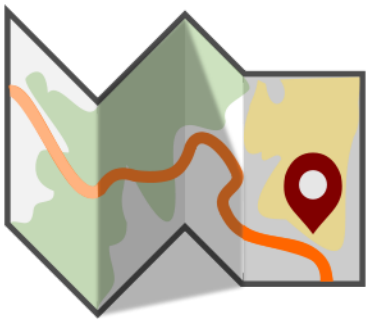
Working with Attributes

QGIS Tutorials and Tips



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Travailler avec les attributs

Une information géographique a deux parties : objets et attributs. Les attributs sont des données structurées caractérisant chaque objet. Ce tutoriel montre comment voir les attributs et y effectuer des requêtes basiques depuis QGIS.

Description

Le lot de données pour ce tutoriel contient des informations sur des lieux populaires dans le monde. Il s'agit de requêter et de trouver toutes les capitales du monde dont la population dépasse 1 000 000 habitants.

Other skills you will learn

- Select features from a layer using expressions.
- Deselect features from a layer using the *Attributes* toolbar.
- Using *Query Builder* to show a subset of features from a layer.

Obtenir les données

Natural Earth has a nice Populated Places dataset. Download the simple (less columns) dataset

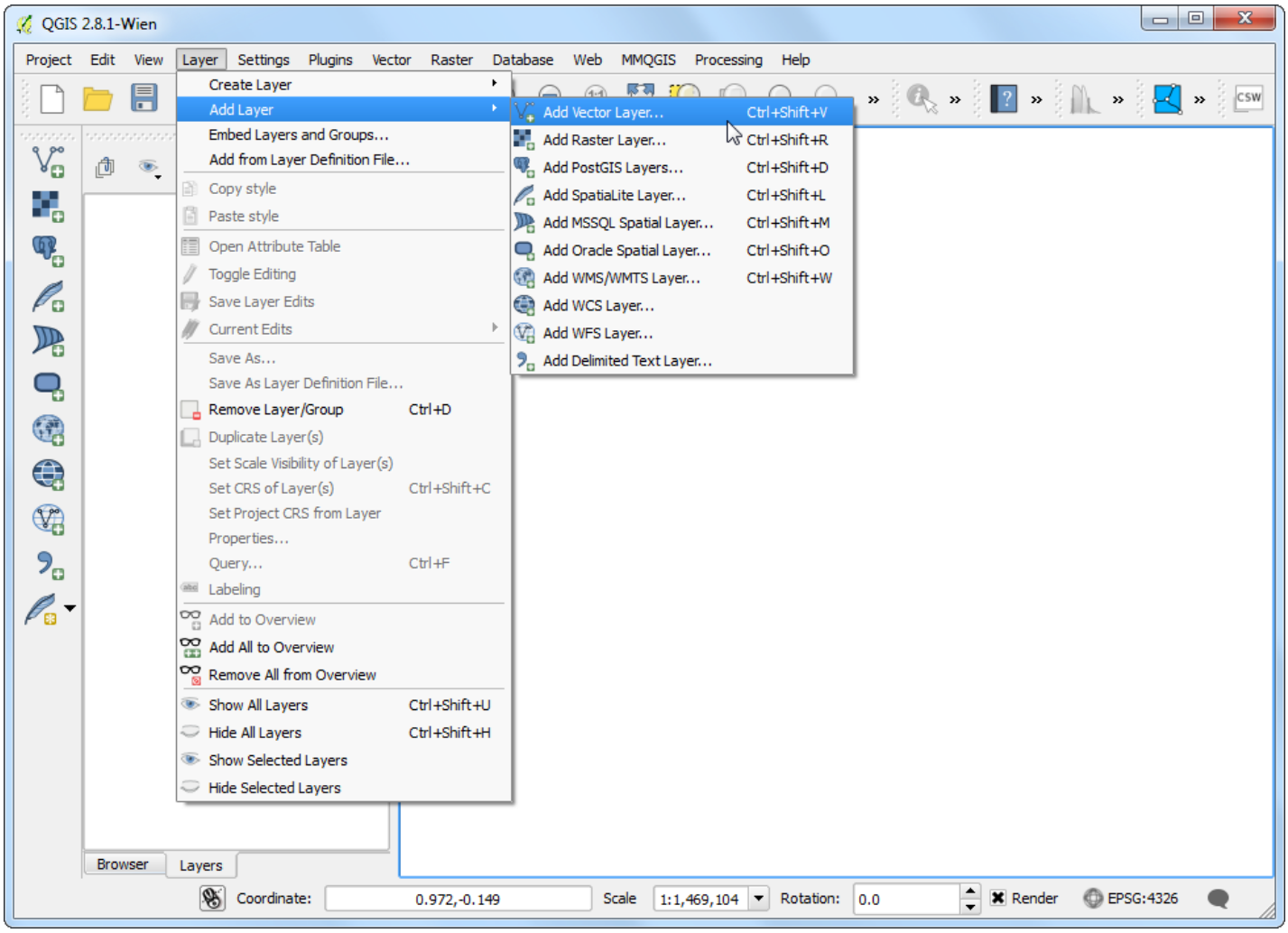
For convenience, you may directly download a copy of datasets from the link below:

ne_10m_populated_places_simple.zip

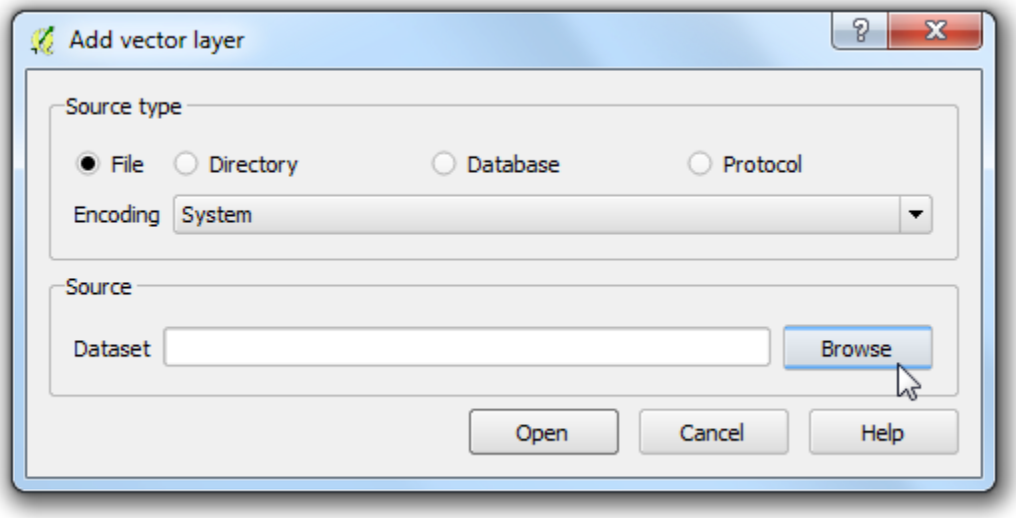
Source [NATURALEARTH]

Procédure

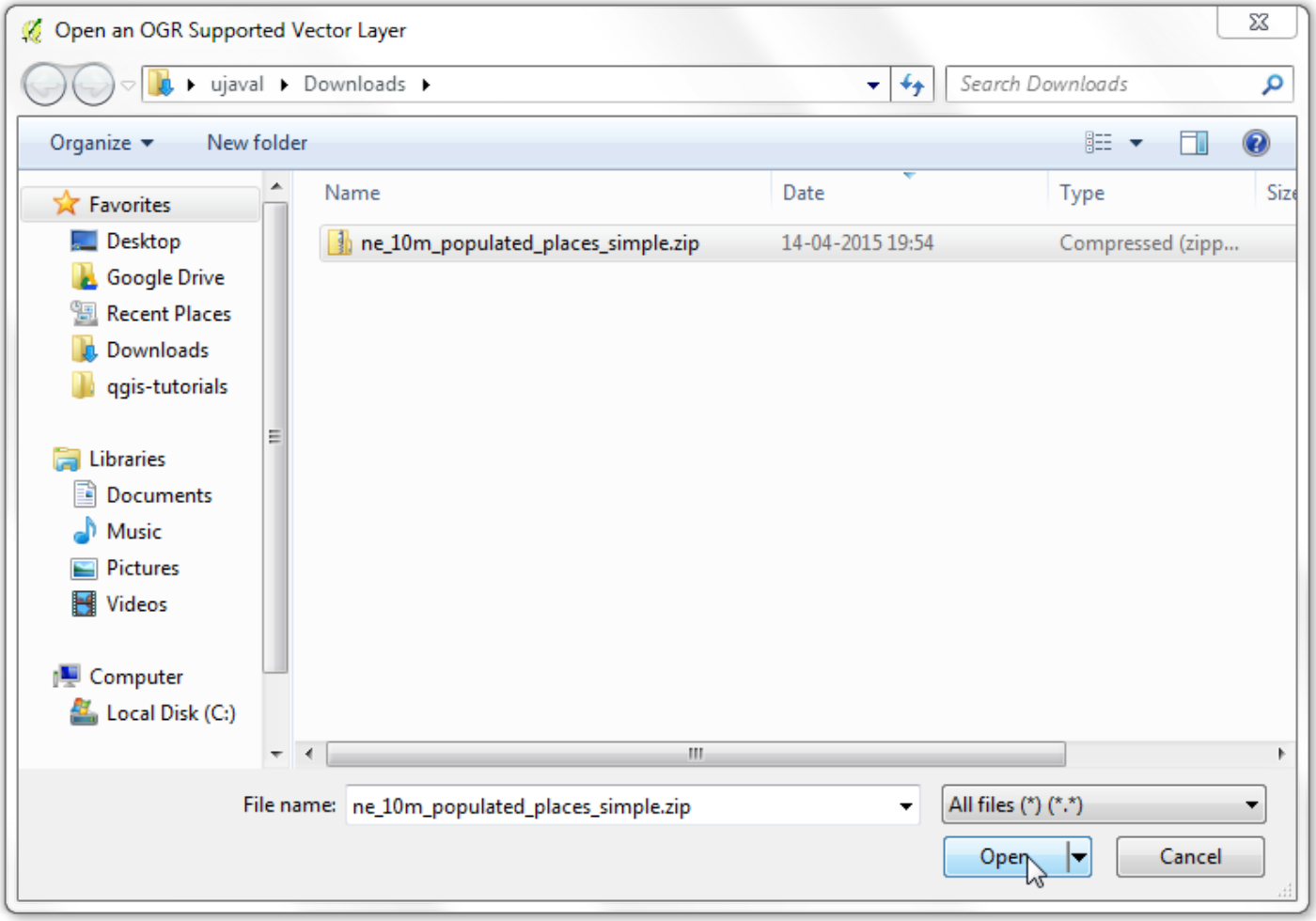
1. Once you have downloaded the data, open QGIS. Go to *Layer* ■ *Add Layer* ■ *Add Vector Layer*.



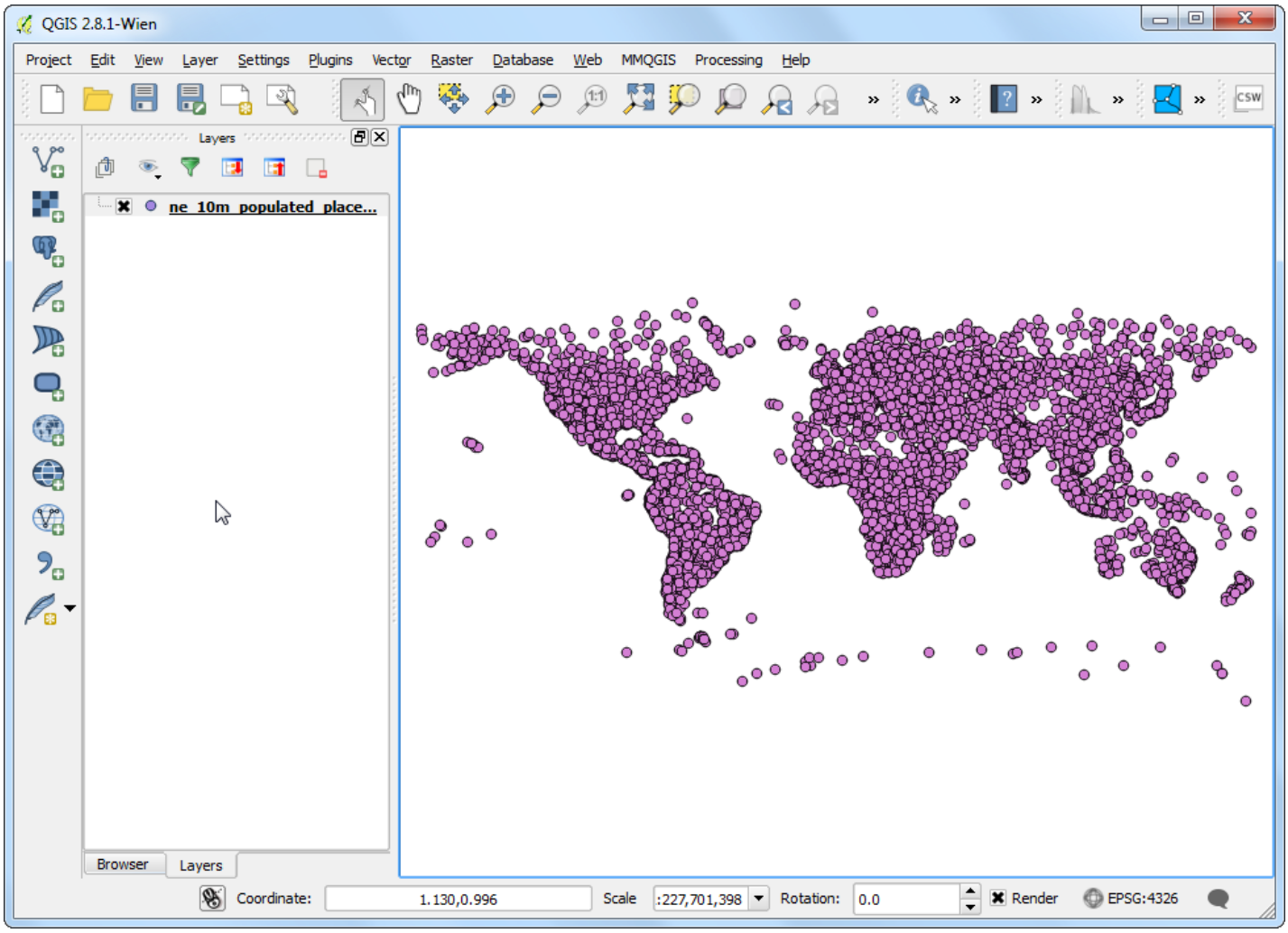
2. Cliquer sur *Browse* et naviguer jusqu'au dossier où les données ont été téléchargées.



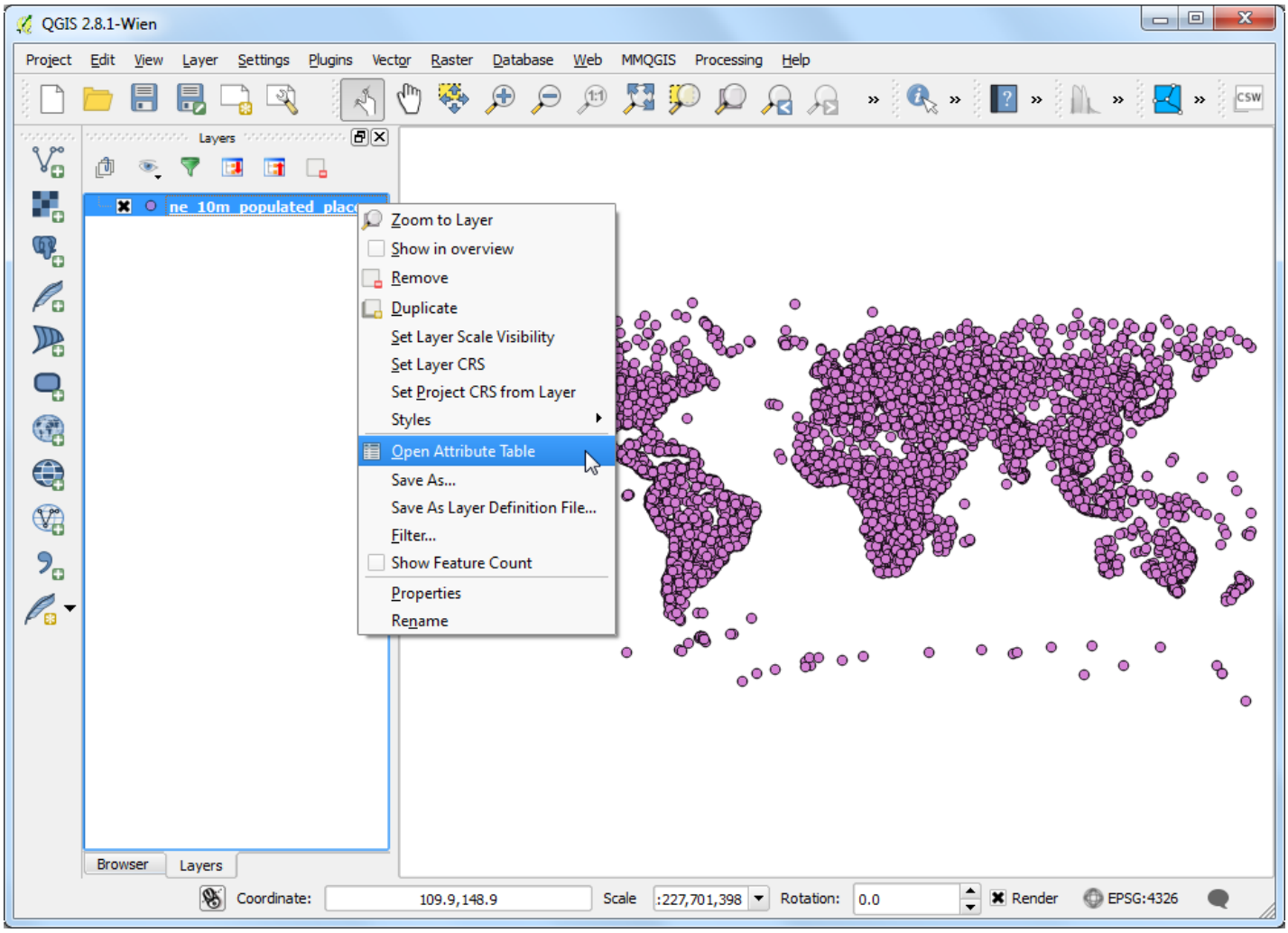
3. Localiser le fichier zip téléchargé *ne_10m_populated_places_simple.zip*. Nul besoin de le décompresser : QGIS a la possibilité de lire directement les fichiers zip. Sélectionner le fichier et cliquer sur *Open*.



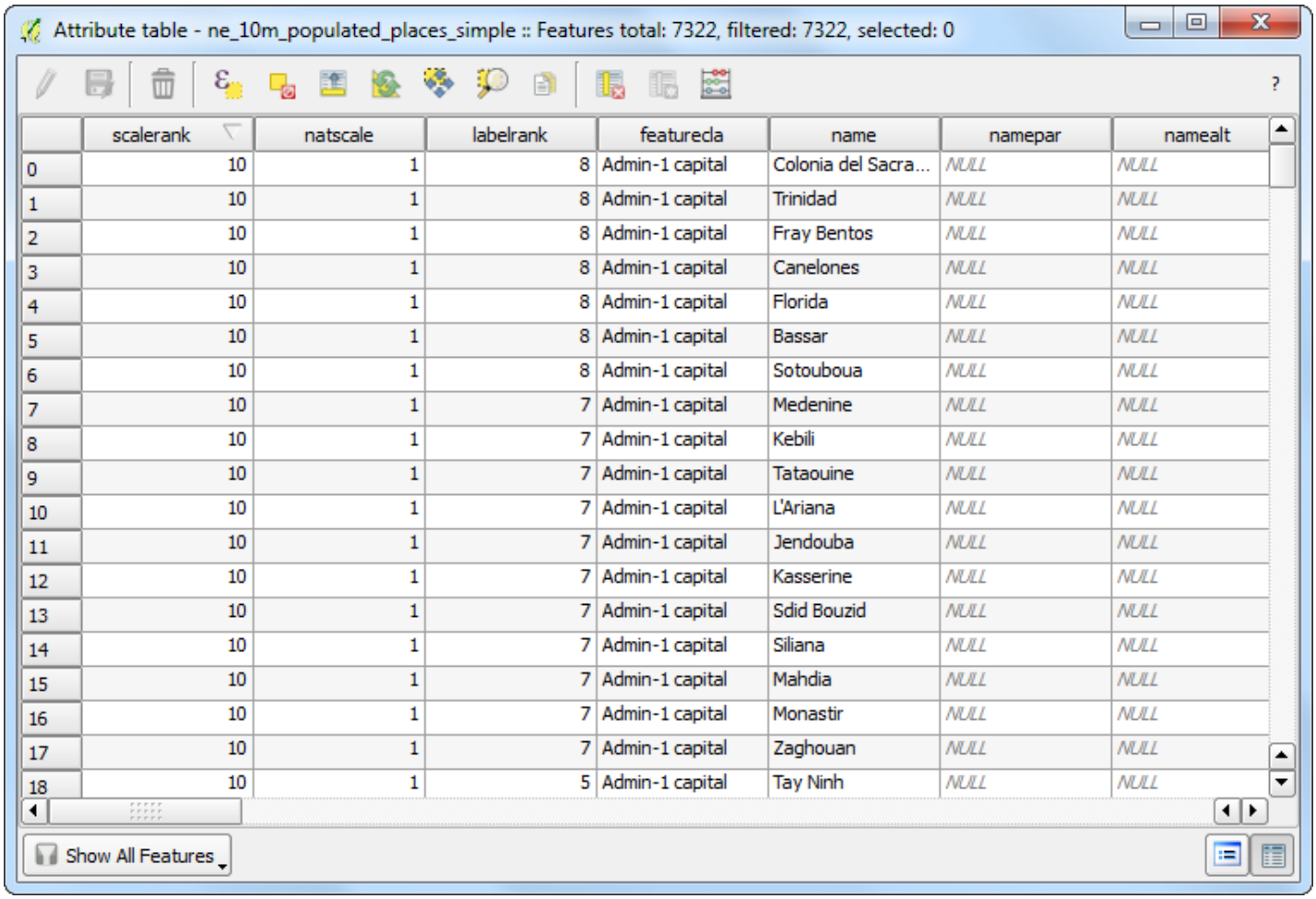
4. Le calque sélectionné sera chargé dans QGIS et vous verrez de nombreux points représentant les lieux habités dans le monde.



5. Right-click the layer and select *Open Attribute Table*.

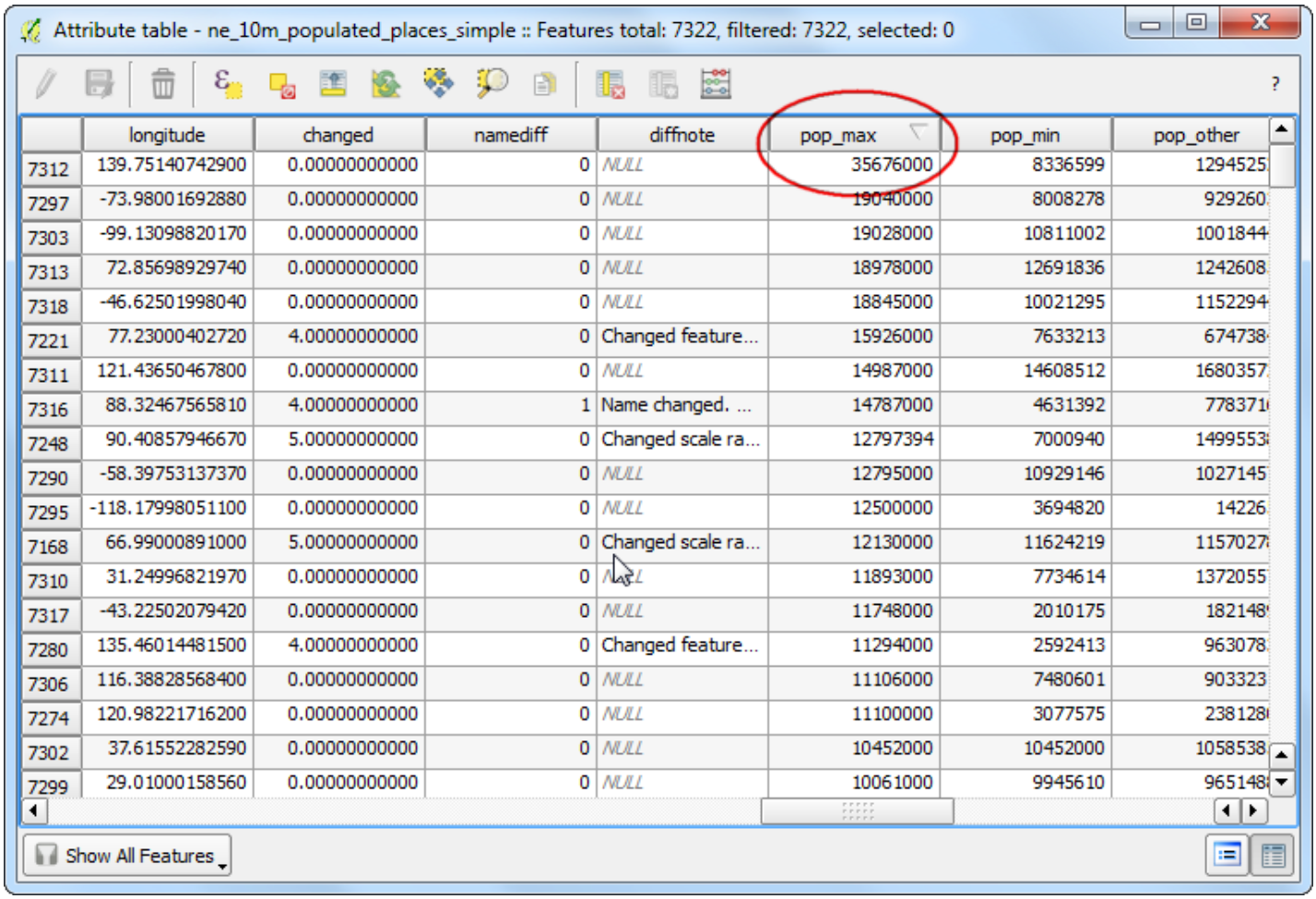


6. Explorer les différents attributs et leurs valeurs.



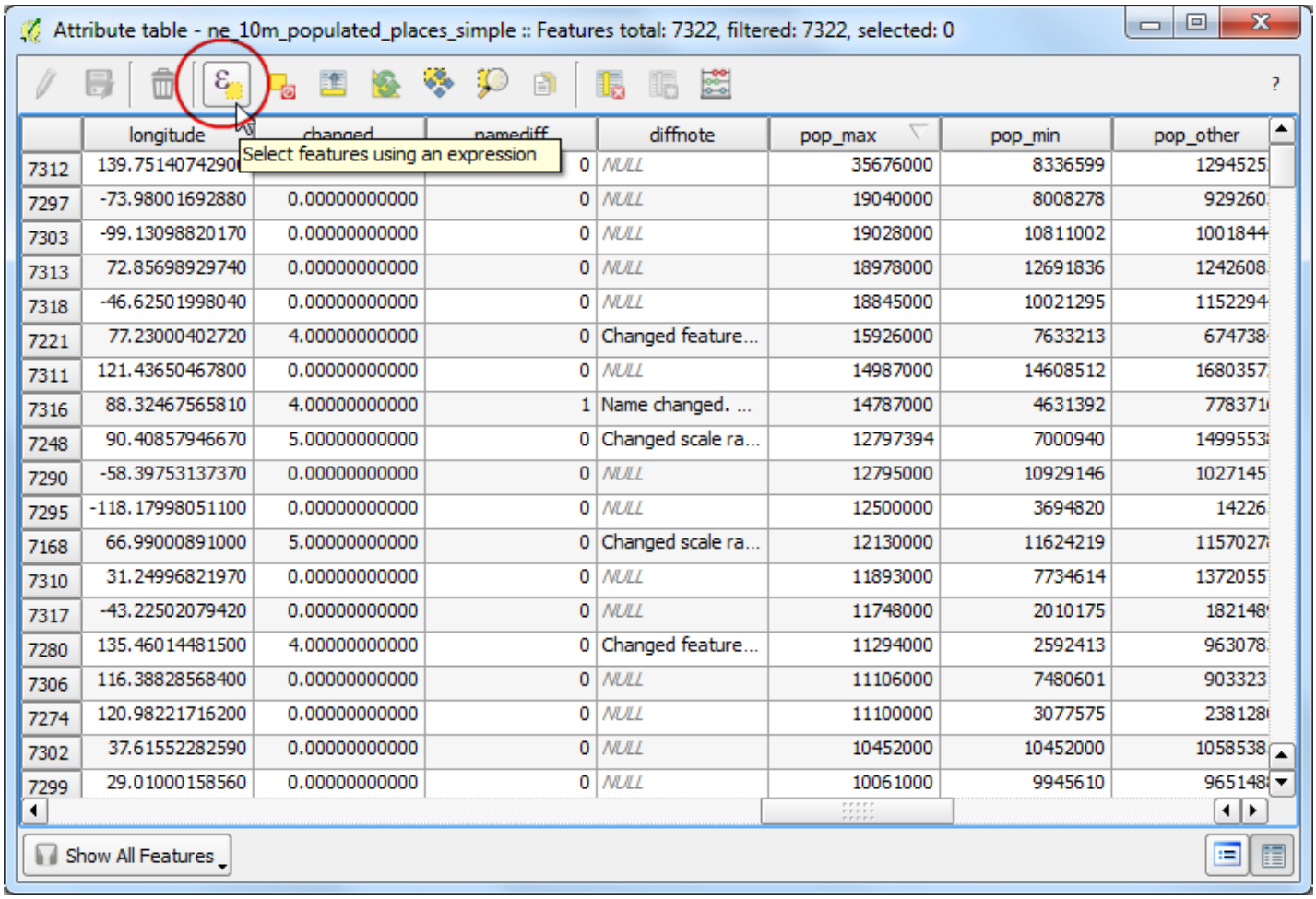
	scalerank	natscale	labelrank	featurecla	name	namepar	namealt
0	10	1	8	Admin-1 capital	Colonia del Sacra...	NULL	NULL
1	10	1	8	Admin-1 capital	Trinidad	NULL	NULL
2	10	1	8	Admin-1 capital	Fray Bentos	NULL	NULL
3	10	1	8	Admin-1 capital	Canelones	NULL	NULL
4	10	1	8	Admin-1 capital	Florida	NULL	NULL
5	10	1	8	Admin-1 capital	Bassar	NULL	NULL
6	10	1	8	Admin-1 capital	Sotouboua	NULL	NULL
7	10	1	7	Admin-1 capital	Medenine	NULL	NULL
8	10	1	7	Admin-1 capital	Kebili	NULL	NULL
9	10	1	7	Admin-1 capital	Tataouine	NULL	NULL
10	10	1	7	Admin-1 capital	L'Ariana	NULL	NULL
11	10	1	7	Admin-1 capital	Jendouba	NULL	NULL
12	10	1	7	Admin-1 capital	Kasserine	NULL	NULL
13	10	1	7	Admin-1 capital	Sdid Bouzid	NULL	NULL
14	10	1	7	Admin-1 capital	Siliana	NULL	NULL
15	10	1	7	Admin-1 capital	Mahdia	NULL	NULL
16	10	1	7	Admin-1 capital	Monastir	NULL	NULL
17	10	1	7	Admin-1 capital	Zaghouan	NULL	NULL
18	10	1	5	Admin-1 capital	Tay Ninh	NULL	NULL

7. Nous nous intéressons à la population de chaque objet, *pop_max* est donc le champ que nous recherchons. Vous pouvez cliquer deux fois sur l'entête du champ pour classer la colonne en ordre décroissant.



	longitude	changed	namediff	diffnote	pop_max	pop_min	pop_other
7312	139.75140742900	0.00000000000	0	NULL	35676000	8336599	1294525
7297	-73.98001692880	0.00000000000	0	NULL	19040000	8008278	929260
7303	-99.13098820170	0.00000000000	0	NULL	19028000	10811002	1001844
7313	72.85698929740	0.00000000000	0	NULL	18978000	12691836	1242608
7318	-46.62501998040	0.00000000000	0	NULL	18845000	10021295	1152294
7221	77.23000402720	4.00000000000	0	Changed feature...	15926000	7633213	674738
7311	121.43650467800	0.00000000000	0	NULL	14987000	14608512	1680357
7316	88.32467565810	4.00000000000	1	Name changed. ...	14787000	4631392	778371
7248	90.40857946670	5.00000000000	0	Changed scale ra...	12797394	7000940	1499553
7290	-58.39753137370	0.00000000000	0	NULL	12795000	10929146	1027145
7295	-118.17998051100	0.00000000000	0	NULL	12500000	3694820	14226
7168	66.99000891000	5.00000000000	0	Changed scale ra...	12130000	11624219	1157027
7310	31.24996821970	0.00000000000	0	NULL	11893000	7734614	1372055
7317	-43.22502079420	0.00000000000	0	NULL	11748000	2010175	182148
7280	135.46014481500	4.00000000000	0	Changed feature...	11294000	2592413	963078
7306	116.38828568400	0.00000000000	0	NULL	11106000	7480601	903323
7274	120.98221716200	0.00000000000	0	NULL	11100000	3077575	238128
7302	37.61552282590	0.00000000000	0	NULL	10452000	10452000	1058538
7299	29.01000158560	0.00000000000	0	NULL	10061000	9945610	965148

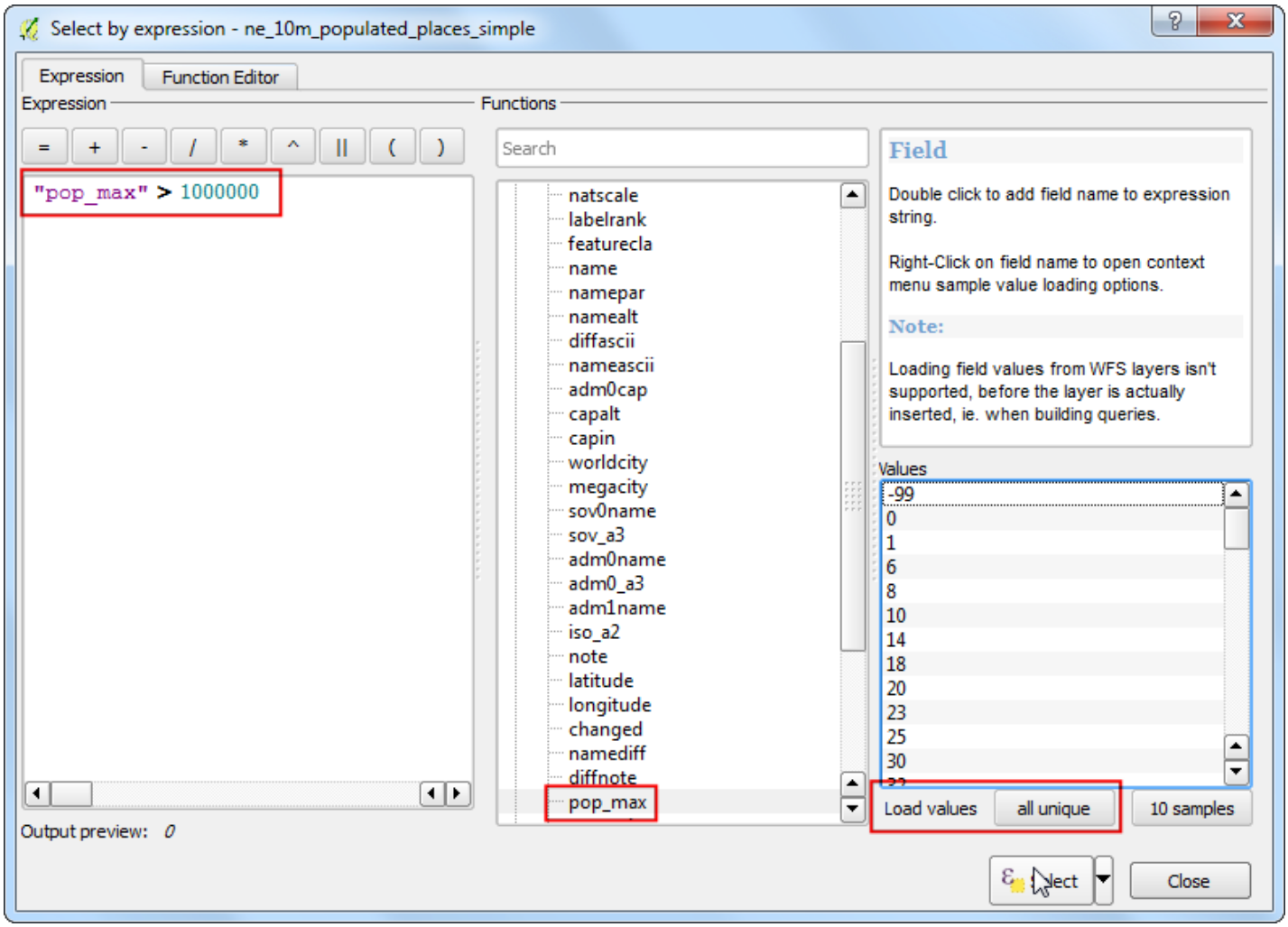
8. Now we are ready to perform our query on these attributes. QGIS uses SQL-like expressions to perform queries. Click *Select features using an expression*.



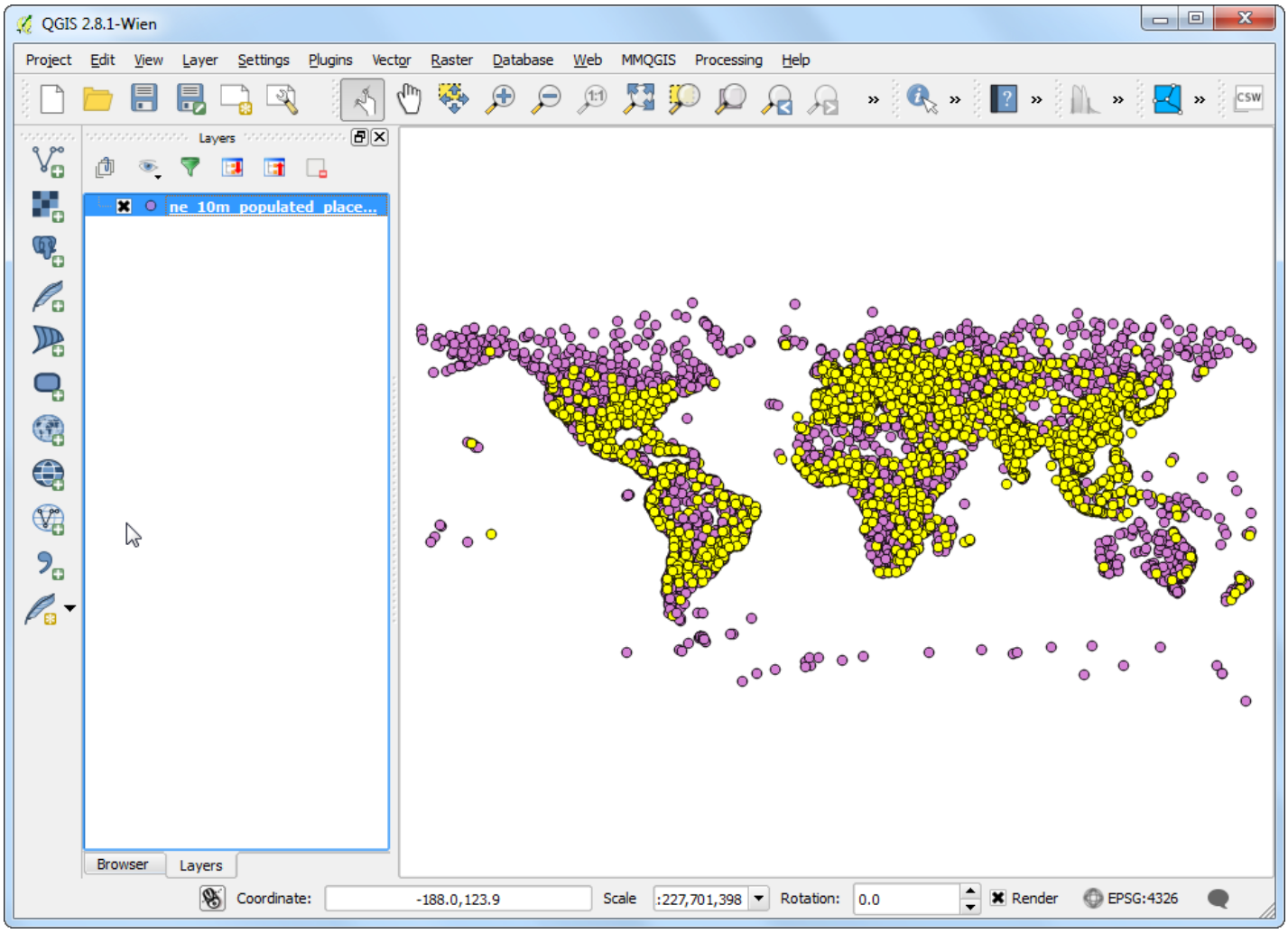
	longitude	changed	namediff	diffnote	pop_max	pop_min	pop_other
7312	139.7514074290		0	NULL	35676000	8336599	1294525
7297	-73.98001692880	0.00000000000	0	NULL	19040000	8008278	929260
7303	-99.13098820170	0.00000000000	0	NULL	19028000	10811002	1001844
7313	72.85698929740	0.00000000000	0	NULL	18978000	12691836	1242608
7318	-46.62501998040	0.00000000000	0	NULL	18845000	10021295	1152294
7221	77.23000402720	4.00000000000	0	Changed feature...	15926000	7633213	674738
7311	121.43650467800	0.00000000000	0	NULL	14987000	14608512	1680357
7316	88.32467565810	4.00000000000	1	Name changed. ...	14787000	4631392	778371
7248	90.40857946670	5.00000000000	0	Changed scale ra...	12797394	7000940	1499553
7290	-58.39753137370	0.00000000000	0	NULL	12795000	10929146	1027145
7295	-118.17998051100	0.00000000000	0	NULL	12500000	3694820	14226
7168	66.99000891000	5.00000000000	0	Changed scale ra...	12130000	11624219	1157027
7310	31.24996821970	0.00000000000	0	NULL	11893000	7734614	1372055
7317	-43.22502079420	0.00000000000	0	NULL	11748000	2010175	182148
7280	135.46014481500	4.00000000000	0	Changed feature...	11294000	2592413	963078
7306	116.38828568400	0.00000000000	0	NULL	11106000	7480601	903323
7274	120.98221716200	0.00000000000	0	NULL	11100000	3077575	238128
7302	37.61552282590	0.00000000000	0	NULL	10452000	10452000	1058538
7299	29.01000158560	0.00000000000	0	NULL	10061000	9945610	965148

9. In the *Select By Expression* window, expand the *Fields and Values* section and double-click the `pop_max` label. You will notice that it is added to the expression section at the bottom. If you aren't sure about the field values, you can click the *Load all unique values* to see what the attribute values are present in the dataset. For this exercise, we are looking to find all features that have a population greater than `1,000,000`. So complete the expression as below and click *Select*.

```
"pop_max" > 1000000
```

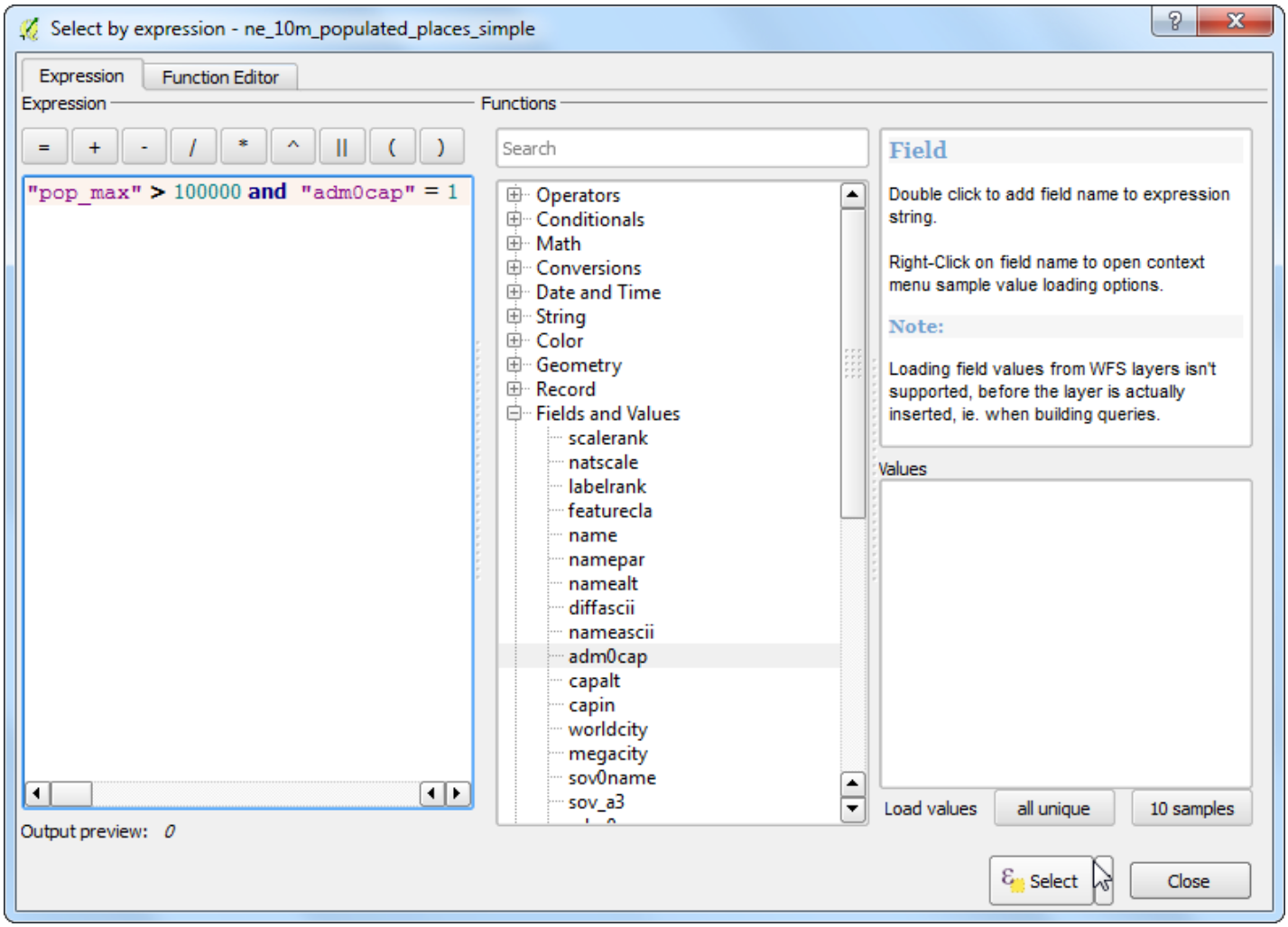


10. Click on *Close* and return to the main QGIS window. You will notice that a subset of points is now rendered in yellow. This is the result of our query and you are seeing all places from the dataset that have the `pop_max` attribute value greater than `1,000,000`.

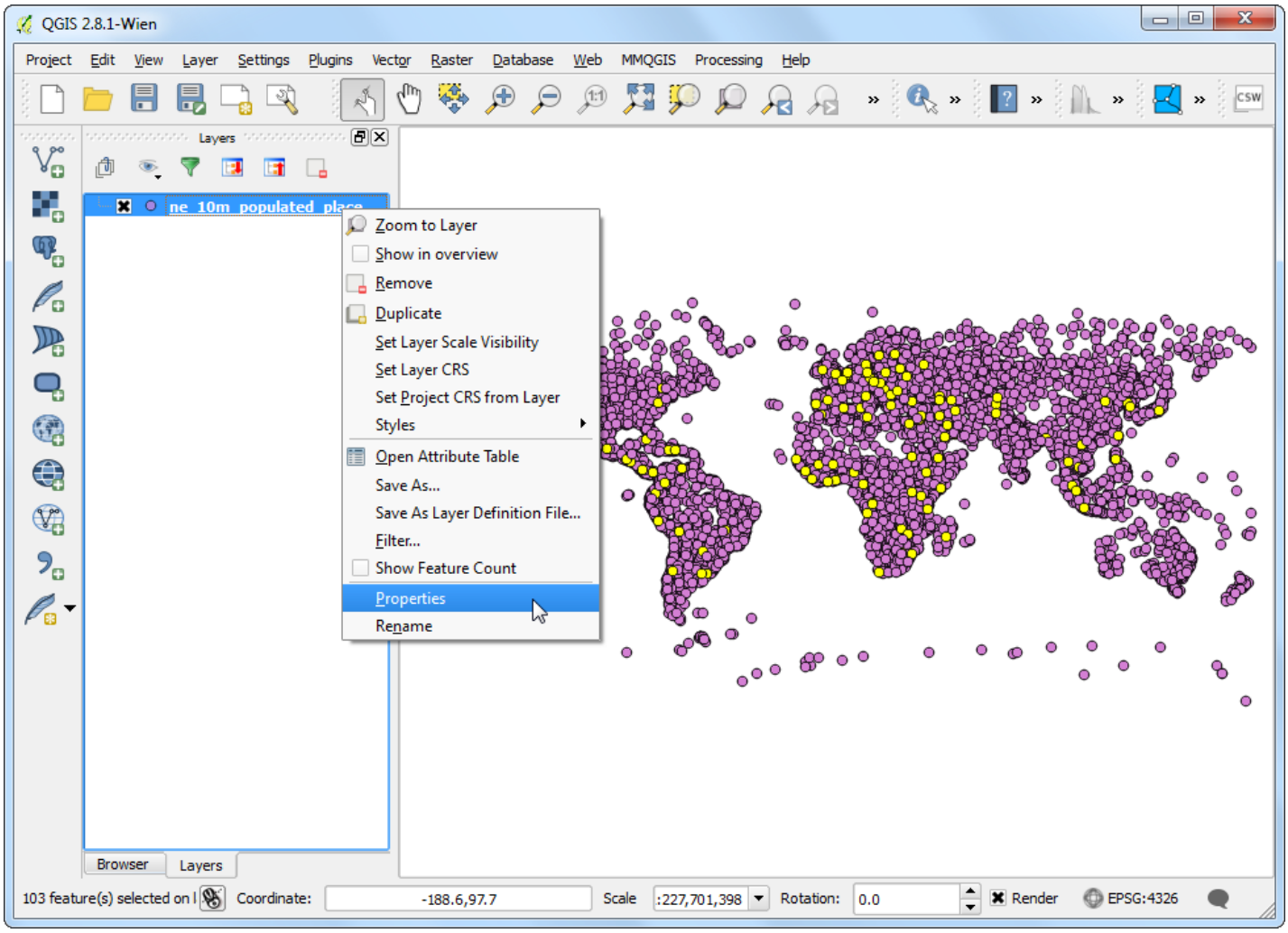


11. The goal for this exercise is to find the places that are country capitals. The field containing this data is *adm0cap*. The value `1` indicates that the place is a capital. We can add this criteria to our previous expression using the `and` operator. Let's refine our query to select only those places which are capitals. Click on the *Select feature using an expression* button in the attribute table and enter the expression as below and click *Select* and then *Close*.

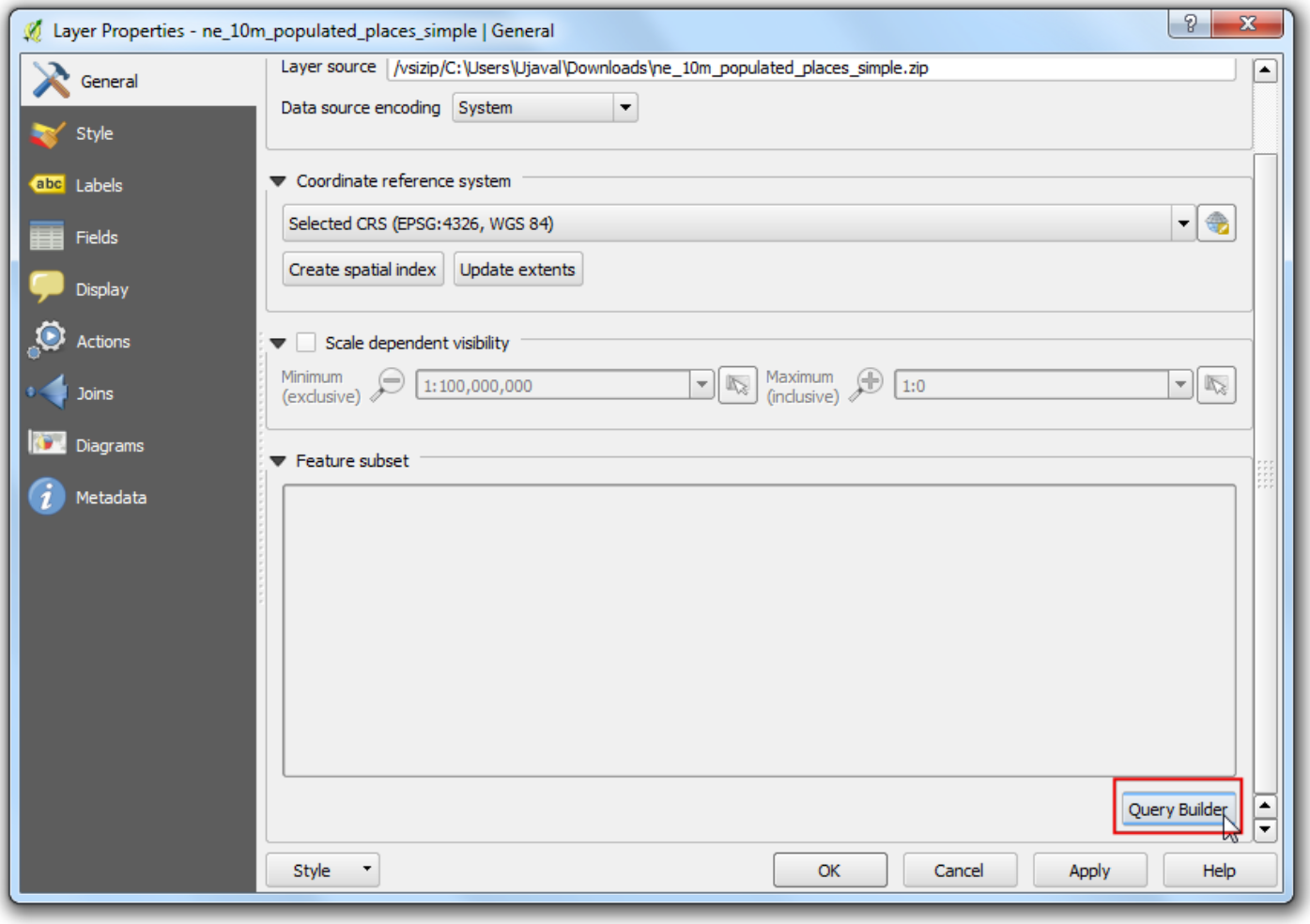
```
"pop_max" > 1000000 and "adm0cap" = 1
```



12. Return to the main QGIS window. Now you will see a smaller subset of the points selected. This is the result of the second query and shows all places from the dataset that are country capitals as well as have population greater than 1,000,000. If we wanted to do some further analysis on this subset of data, we can make this selection persistent. Right-click the `ne_10m_populated_places_simple` layer and select *Properties*.

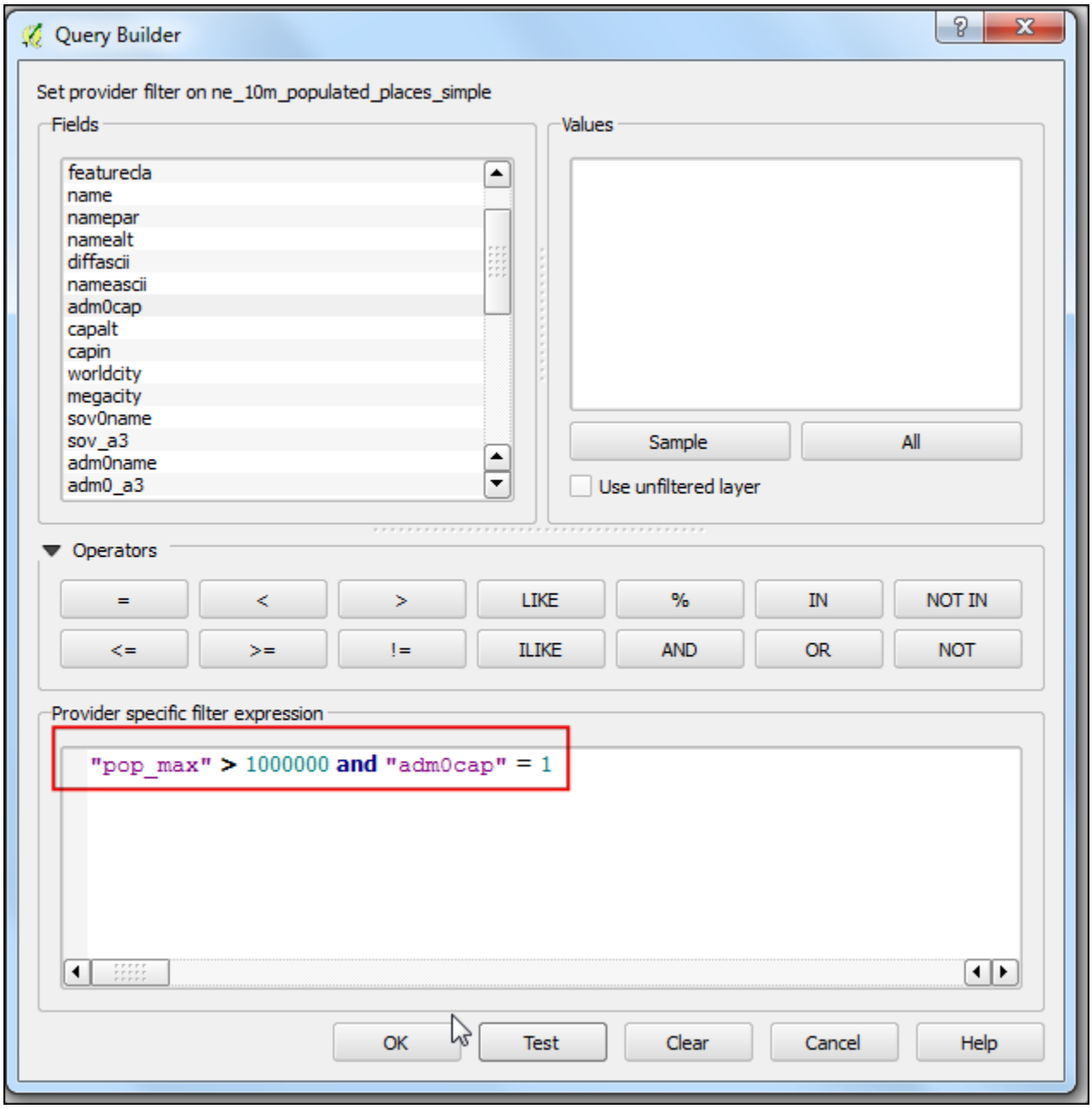


13. In the *General* tab, scroll down to the *Feature subset* section. Click *Query Builder*.

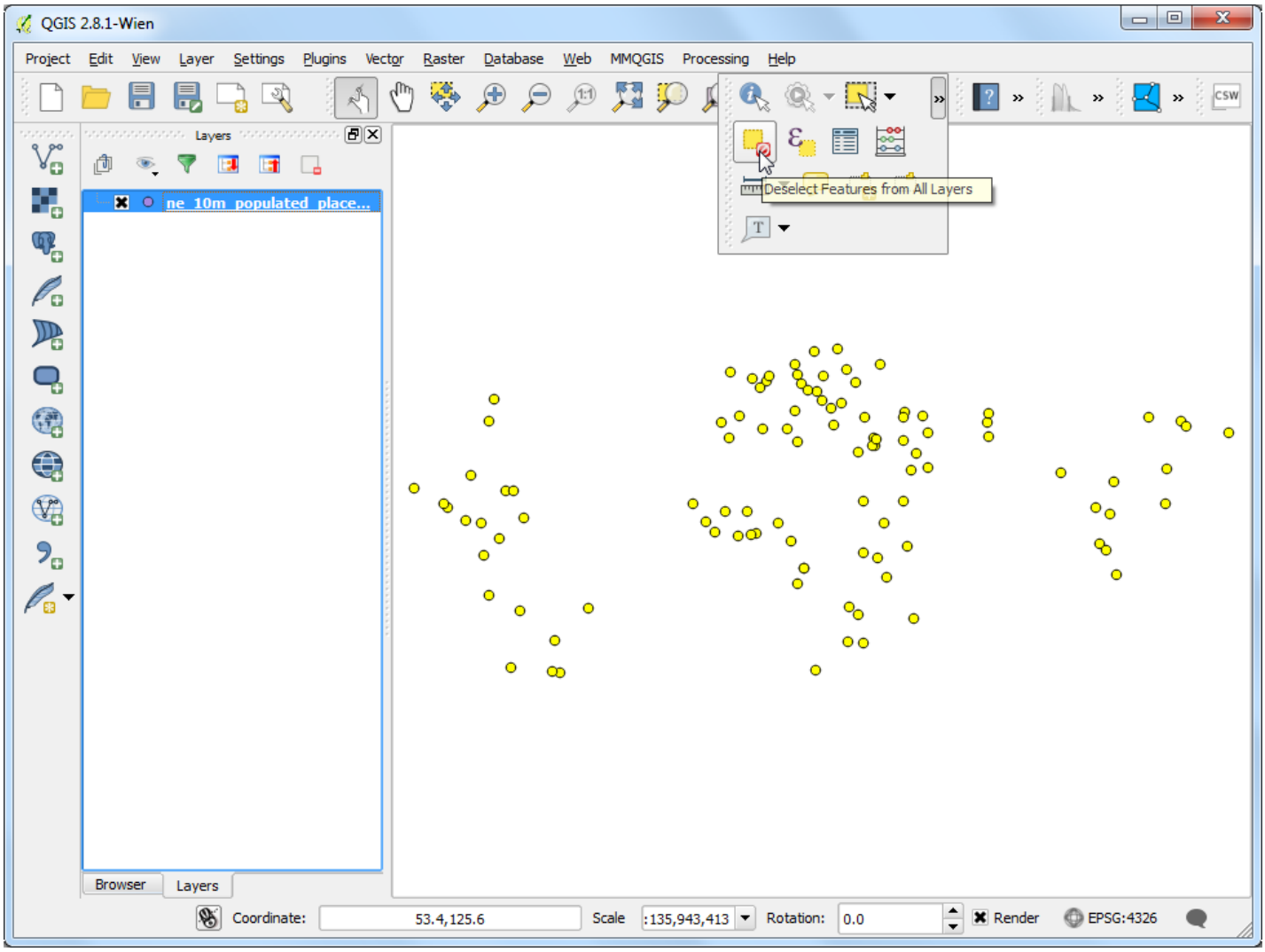


14. Enter the same expression you had entered earlier and click *OK*.

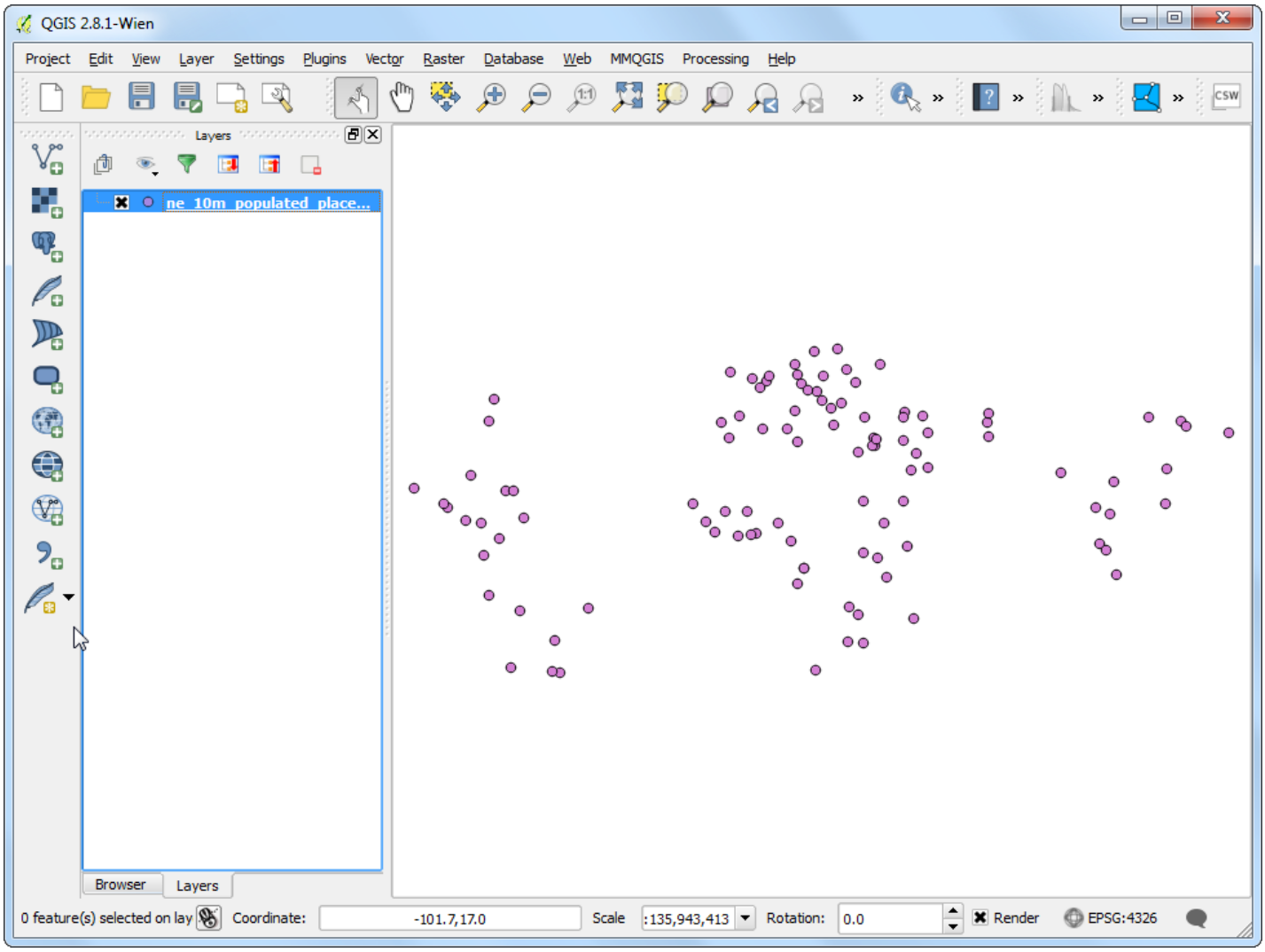
```
"pop_max" > 1000000 and "adm0cap" = 1
```



15. Back in the main QGIS window, you will see rest of the points disappear. You may now perform any other analysis on this layer and only the features that match our expression will be used. You will notice that the points still appear in yellow. This is because they are still selected. Find the *Deselect Features from All Layers* button under the *Attributes* toolbar and click on it.



16. You will see that the points are now de-selected and rendered in their original color.


QGIS 2.8.1-Wien
Project Edit View Layer Settings Plugins Vector Raster Database Web MMQGIS Processing Help
Layers
ne_10m_populated_place...
Browser
Layers
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Coordinate:
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Scale
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Rotation:
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Render
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