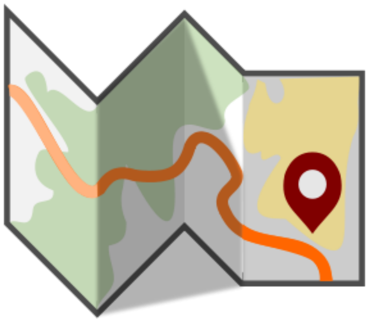
Working with Attributes

QGIS Tutorials and Tips



Author

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Translations by

SongHyun Choi

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속성작업

GIS 데이터는 두가지가 있습니다 . 피처와 속성 . 속성은 각 피처에 대한 구조데이터입니다 . 이 튜토리얼에서는 QGIS에서 속성을 어떻게 보며 속성에 대한 기본 조회방법을 보여줍니다 .

작업 개요

이 튜토리얼의 데이터셋은 세계의 인구분포에 대한 정보가 포함되어 있습니다. 작업은 전 세계를 대상으로 인구 1,000,000명을 초과하는 수도에 대한 조회와 찾기입니다 .

데이터 획득

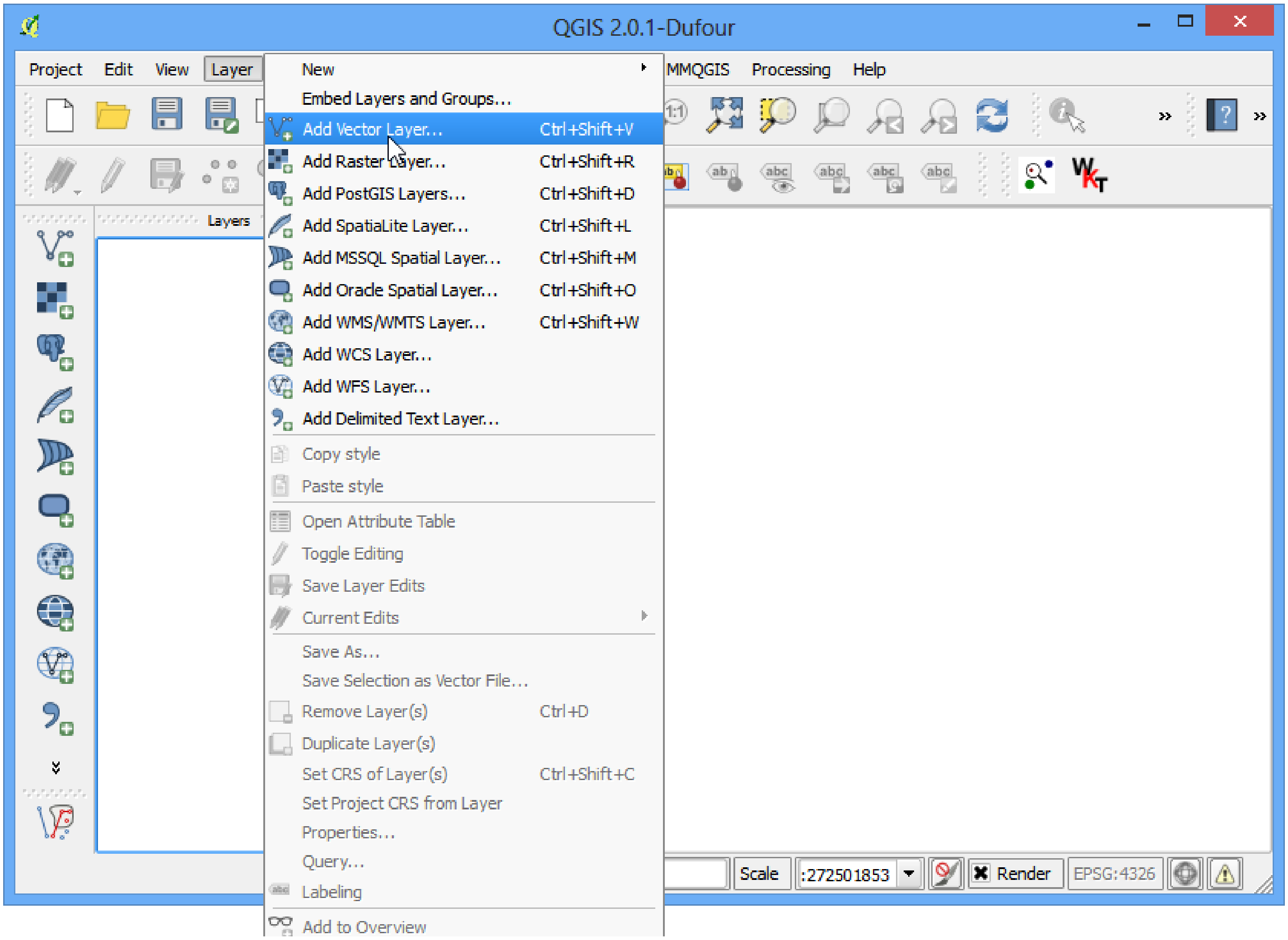
사용할 데이터는 Natural Earth의 Populated Places dataset 입니다.

`Natural Earth Populated Places shapefile. <http://www.naturalearthdata.com/http//www.naturalearthdata.com/download/10m/cultural/ne_10m_populated_places_simple.zip>`_를 다운받으

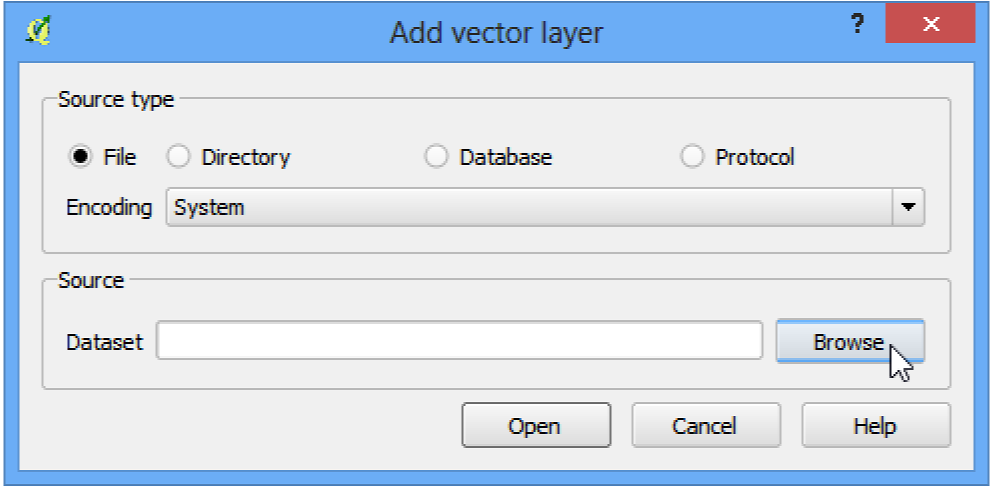
데이터 소스 [NATURALEARTH]

과정

1. 다운로드가 완료되면 QGIS를 시작하십시오 . 메뉴 선택에서 :menuselection:'레이어 --> 레이어추가 --> 벡터 레이어 추가...'


QGIS 2.0.1-Dufour
Project
Edit
View
Layer
MMQGIS
Processing
Help
New
Embed Layers and Groups...
Add Vector Layer... Ctrl+Shift+V
Add Raster Layer... Ctrl+Shift+R
Add PostGIS Layers... Ctrl+Shift+D
Add SpatiaLite Layer... Ctrl+Shift+L
Add MSSQL Spatial Layer... Ctrl+Shift+M
Add Oracle Spatial Layer... Ctrl+Shift+O
Add WMS/WMTS Layer... Ctrl+Shift+W
Add WCS Layer...
Add WFS Layer...
Add Delimited Text Layer...
Copy style
Paste style
Open Attribute Table
Toggle Editing
Save Layer Edits
Current Edits
Save As...
Save Selection as Vector File...
Remove Layer(s) Ctrl+D
Duplicate Layer(s)
Set CRS of Layer(s) Ctrl+Shift+C
Set Project CRS from Layer
Properties...
Query...
Labeling
Add to Overview
Layers
Scale
:272501853
Render
EPSG:4326

2. Click on Browse and navigate to the folder where you downloaded the data.



Add vector layer

Source type

● File ○ Directory ○ Database ○ Protocol

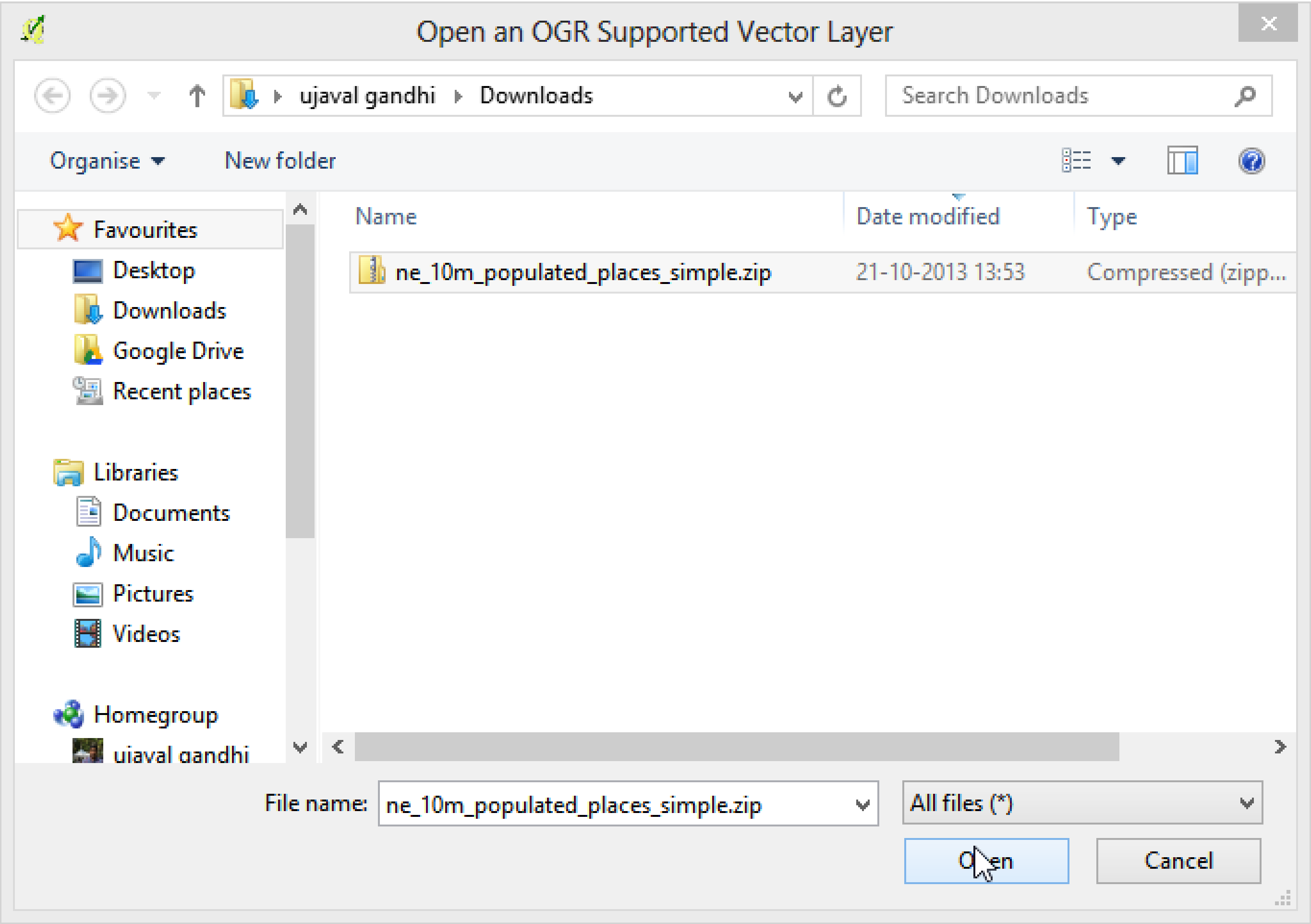
Encoding: System

Source

Dataset:

Browse
Open
Cancel
Help

3. Locate the downloaded zip file ***ne_10m_populated_places_simple.zip***. You do not need to unzip the file. QGIS has the ability to read zip files directly. Select the file and click Open.



Open an OGR Supported Vector Layer

ujaval gandhi ▸ Downloads

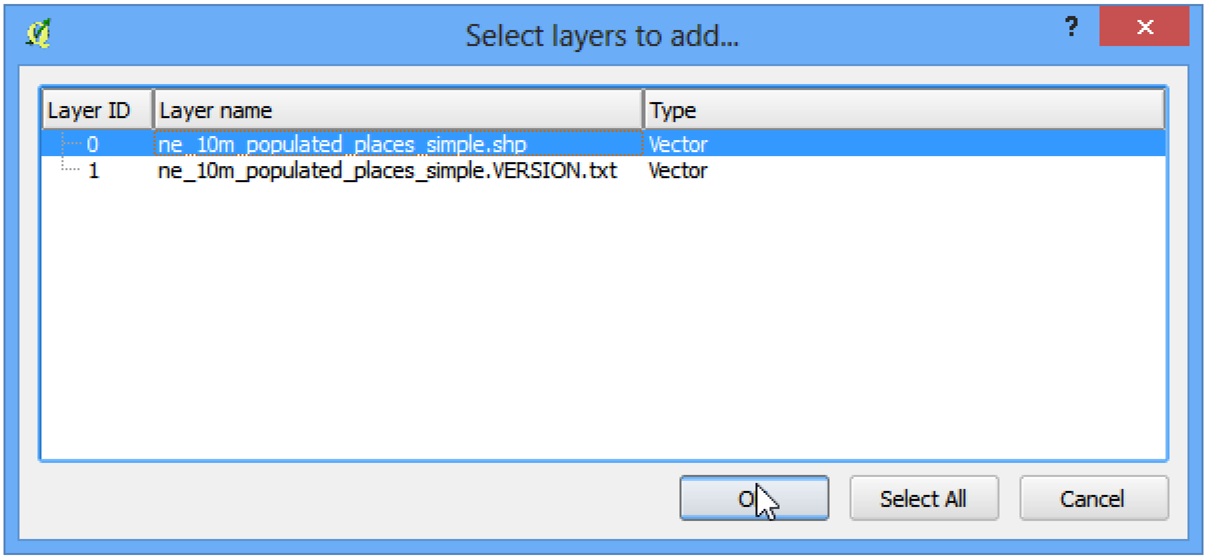
Name	Date modified	Type
ne_10m_populated_places_simple.zip	21-10-2013 13:53	Compressed (zipp...

File name: ne_10m_populated_places_simple.zip

All files (*)

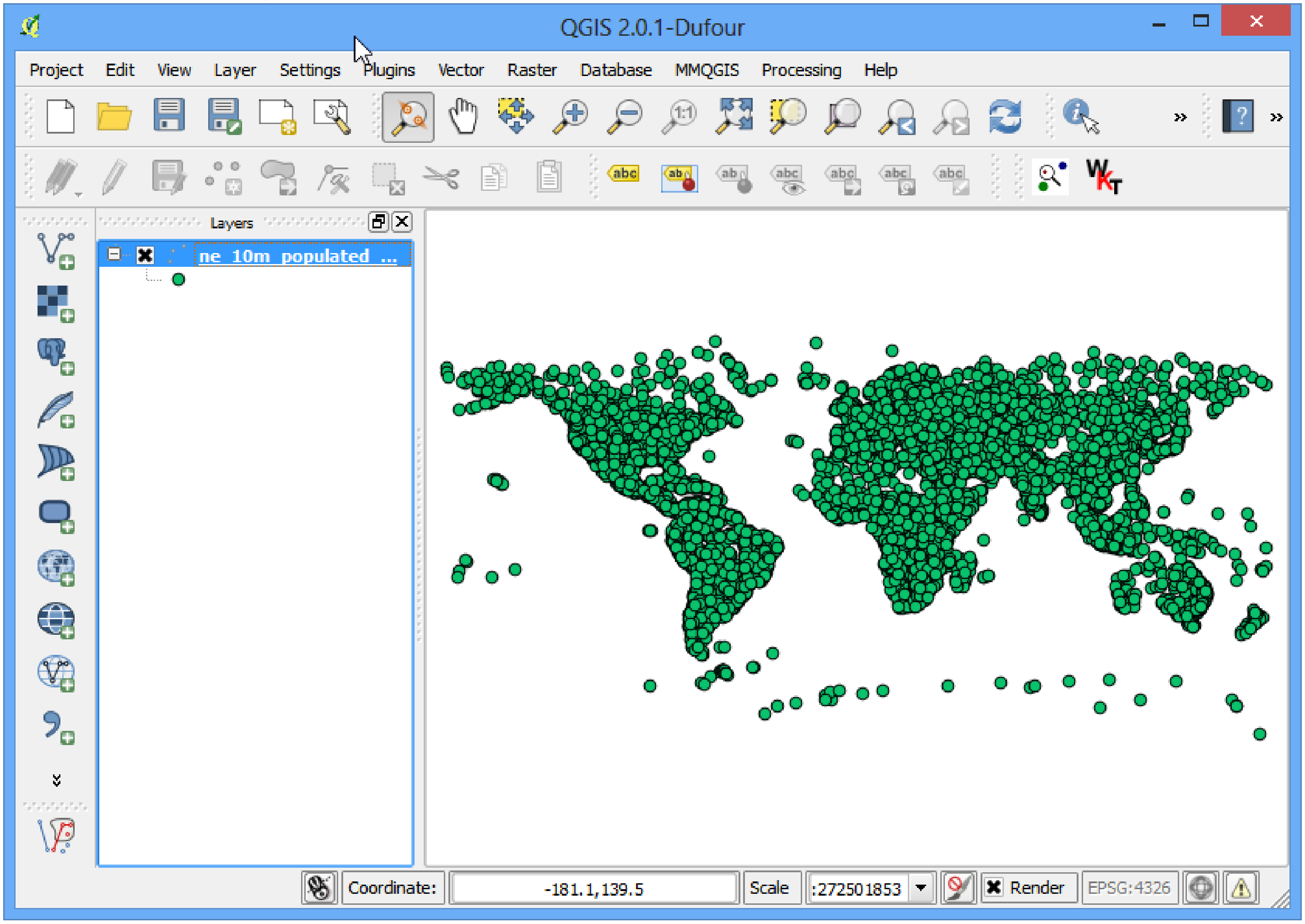
Search Downloads
Organise
New folder
Favourites
Desktop
Downloads
Google Drive
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
ujaval gandhi
Open
Cancel

4. 오픈할 레이어를 선택하라는 창을 만나게 됩니다 . 그러면 `ne_10m_populated_places_simple.shp'를 선택하고 :guilabel:'OK`를 클릭합니다 .


Select layers to add...
OK
Select All
Cancel

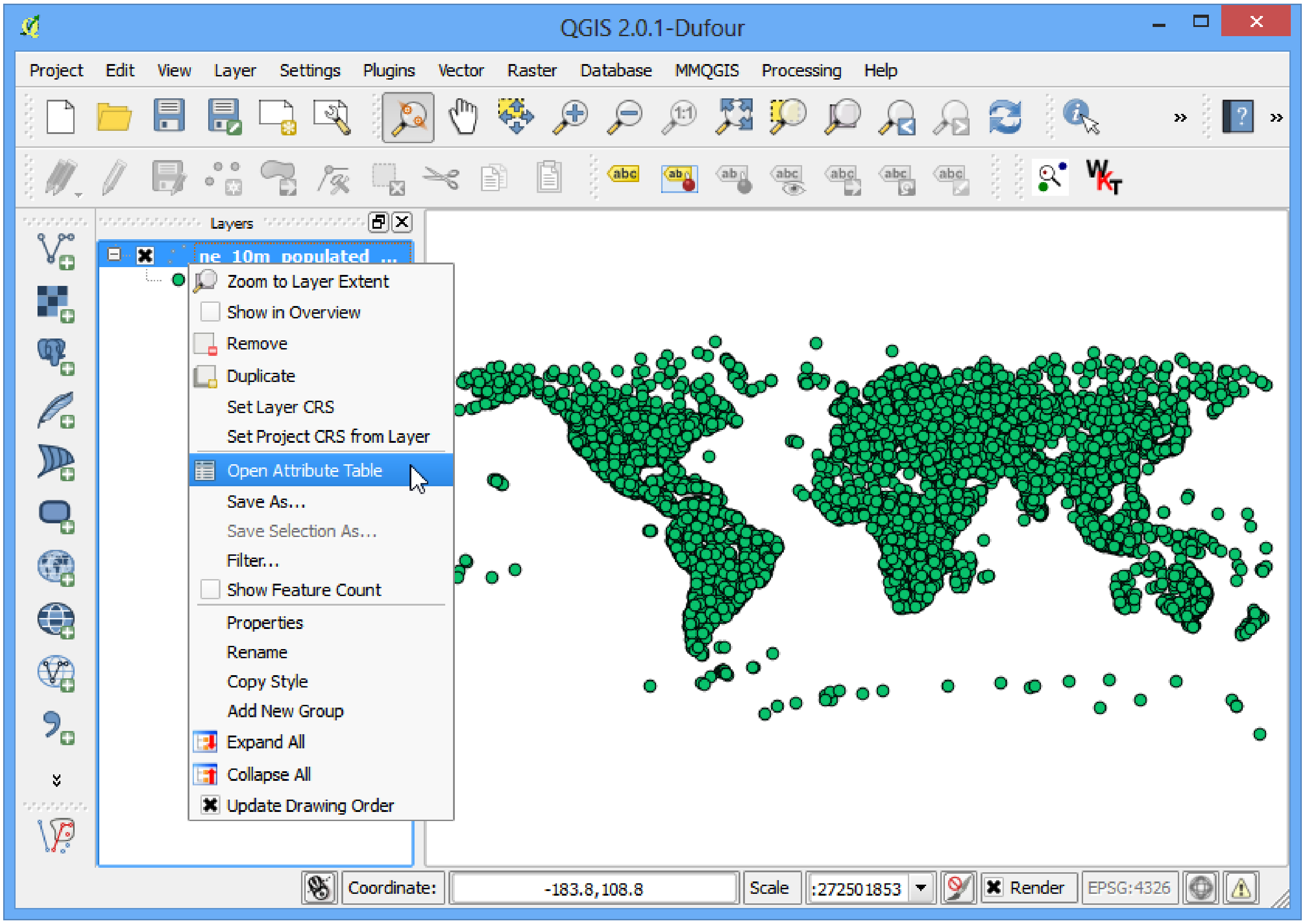
Layer ID	Layer name	Type
0	ne_10m_populated_places_simple.shp	Vector
1	ne_10m_populated_places_simple.VERSION.txt	Vector

5. 선택된 레이어가 QGIS에 올라오고 세계지도에 인구분포를 나타내는 많은 점들을 보게 됩니다 .

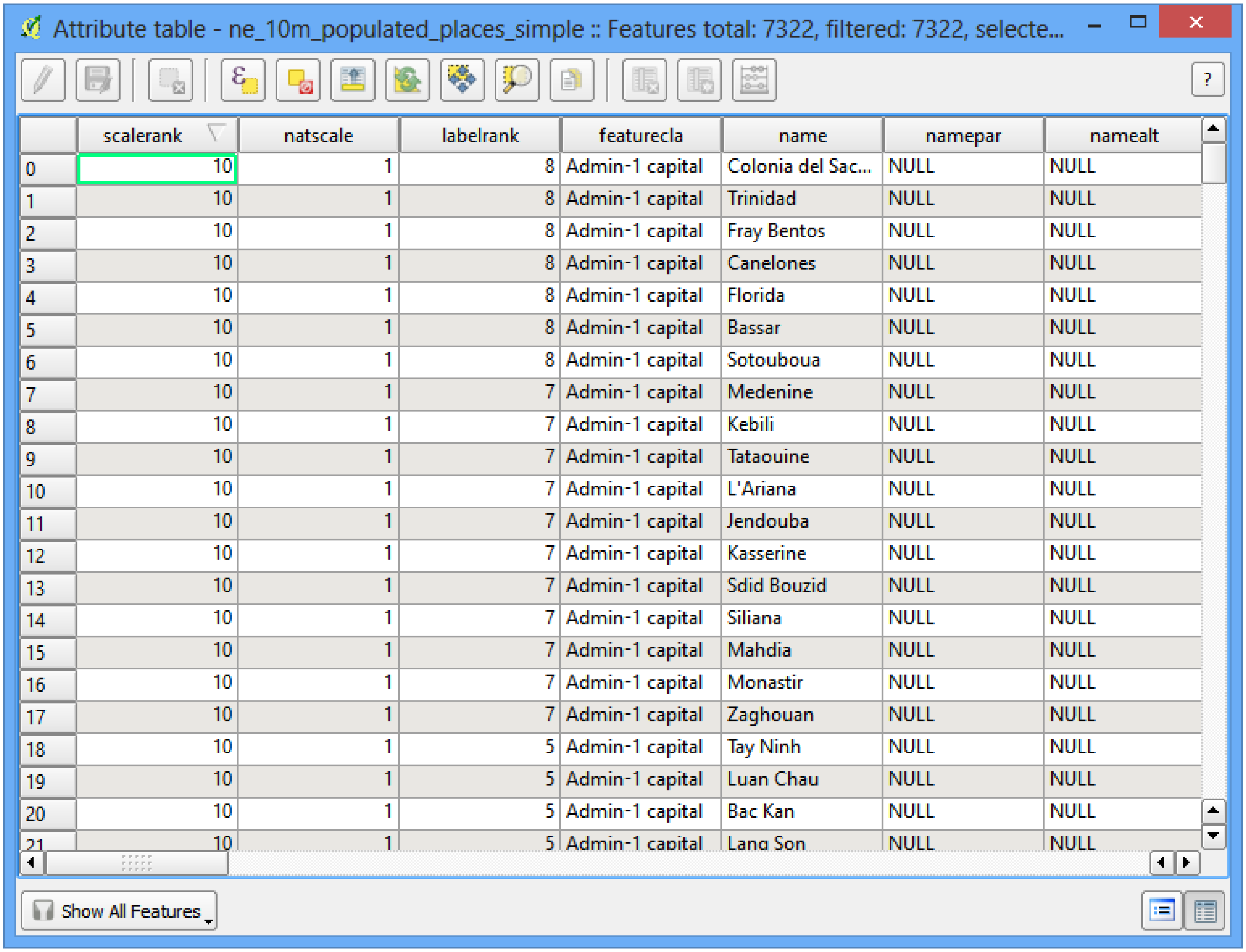

QGIS 2.0.1-Dufour
Project
Edit
View
Layer
Settings
Plugins
Vector
Raster
Database
MMQGIS
Processing
Help
Layers
ne_10m_populated ...

Coordinate: -181.1,139.5
Scale :272501853
Render
EPSG:4326

6. 속성을 보기 위해 레이어에서 마우스 오른쪽 버튼을 클릭하고 :guilabel:`Open Attribute Table`를 선택합니다.


QGIS 2.0.1-Dufour
Project
Edit
View
Layer
Settings
Plugins
Vector
Raster
Database
MMQGIS
Processing
Help
Layers
ne_10m_populated ...
Zoom to Layer Extent
Show in Overview
Remove
Duplicate
Set Layer CRS
Set Project CRS from Layer
Open Attribute Table
Save As...
Save Selection As...
Filter...
Show Feature Count
Properties
Rename
Copy Style
Add New Group
Expand All
Collapse All
Update Drawing Order
Coordinate:
-183.8,108.8
Scale
:272501853
Render
EPSG:4326

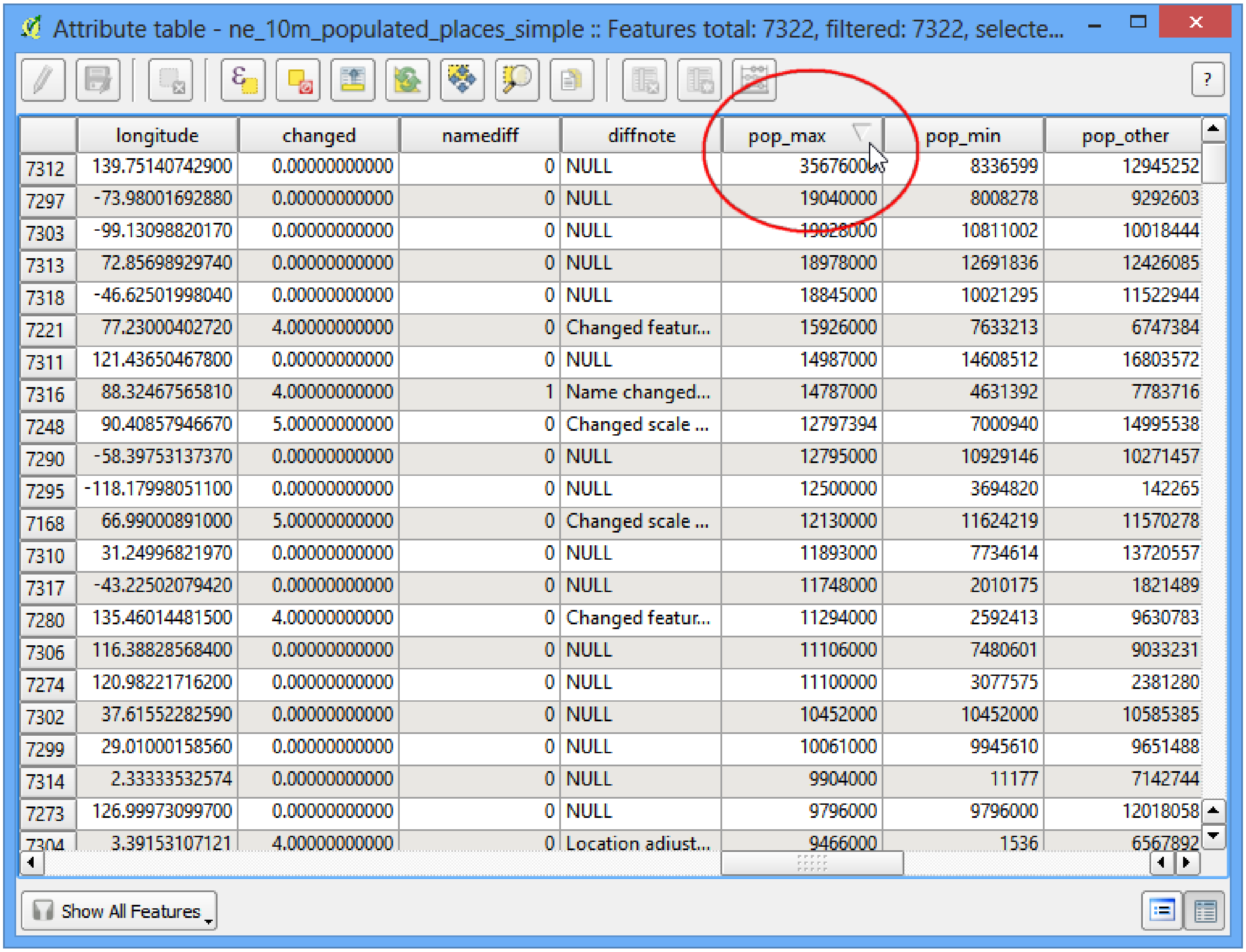
7. 다양한 속성과 해당 값들을 살펴봅니다 .



Attribute table - ne_10m_populated_places_simple :: Features total: 7322, filtered: 7322, selecte...

	scalerank	natscale	labelrank	featurecla	name	namepar	namealt
0	10	1	8	Admin-1 capital	Colonia del Sac...	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
19	10	1	5	Admin-1 capital	Luan Chau	NULL	NULL
20	10	1	5	Admin-1 capital	Bac Kan	NULL	NULL
21	10	1	5	Admin-1 capital	Lang Son	NULL	NULL

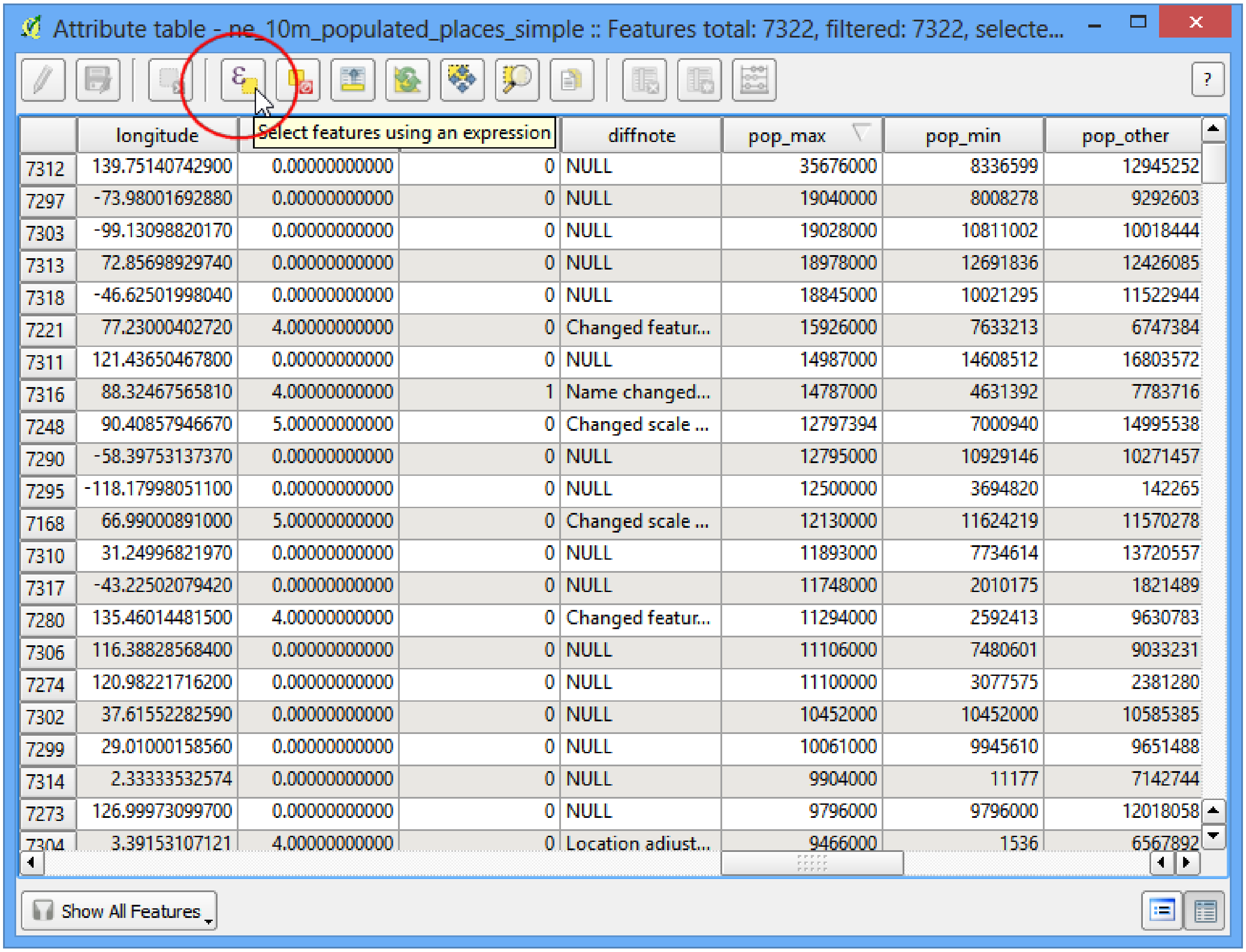
8. 각 피처에서 인구에 관심이 있는데, `pop_max`가 찾는 필드입니다. 필드 헤더를 더블클릭하면 내림차순으로 정렬할 수 있습니다.



Attribute table - ne_10m_populated_places_simple :: Features total: 7322, filtered: 7322, selecte...

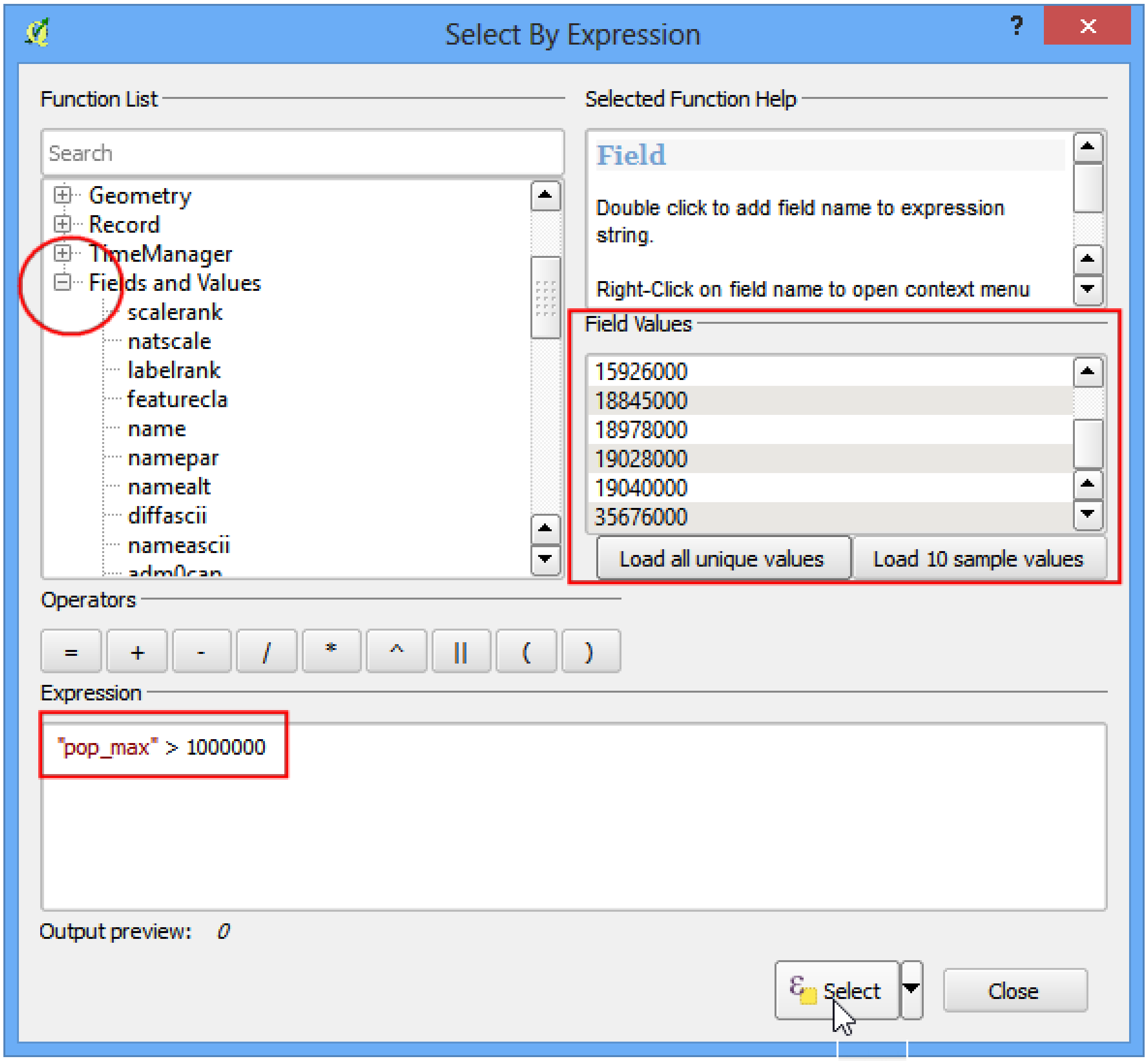
	longitude	changed	namediff	diffnote	pop_max	pop_min	pop_other
7312	139.75140742900	0.00000000000	0	NULL	35676000	8336599	12945252
7297	-73.98001692880	0.00000000000	0	NULL	19040000	8008278	9292603
7303	-99.13098820170	0.00000000000	0	NULL	19028000	10811002	10018444
7313	72.85698929740	0.00000000000	0	NULL	18978000	12691836	12426085
7318	-46.62501998040	0.00000000000	0	NULL	18845000	10021295	11522944
7221	77.23000402720	4.00000000000	0	Changed featur...	15926000	7633213	6747384
7311	121.43650467800	0.00000000000	0	NULL	14987000	14608512	16803572
7316	88.32467565810	4.00000000000	1	Name changed...	14787000	4631392	7783716
7248	90.40857946670	5.00000000000	0	Changed scale ...	12797394	7000940	14995538
7290	-58.39753137370	0.00000000000	0	NULL	12795000	10929146	10271457
7295	-118.17998051100	0.00000000000	0	NULL	12500000	3694820	142265
7168	66.99000891000	5.00000000000	0	Changed scale ...	12130000	11624219	11570278
7310	31.24996821970	0.00000000000	0	NULL	11893000	7734614	13720557
7317	-43.22502079420	0.00000000000	0	NULL	11748000	2010175	1821489
7280	135.46014481500	4.00000000000	0	Changed featur...	11294000	2592413	9630783
7306	116.38828568400	0.00000000000	0	NULL	11106000	7480601	9033231
7274	120.98221716200	0.00000000000	0	NULL	11100000	3077575	2381280
7302	37.61552282590	0.00000000000	0	NULL	10452000	10452000	10585385
7299	29.01000158560	0.00000000000	0	NULL	10061000	9945610	9651488
7314	2.33333532574	0.00000000000	0	NULL	9904000	11177	7142744
7273	126.99973099700	0.00000000000	0	NULL	9796000	9796000	12018058
7304	3.39153107121	4.00000000000	0	Location adjust...	9466000	1536	6567892

9. 이제 이러한 속성에 대해 :guilabel:`Select features using an expression` 으로 조회를 할 준비가 되었습니다.


Attribute table - ne_10m_populated_places_simple :: Features total: 7322, filtered: 7322, selecte...
Select features using an expression
?
Show All Features

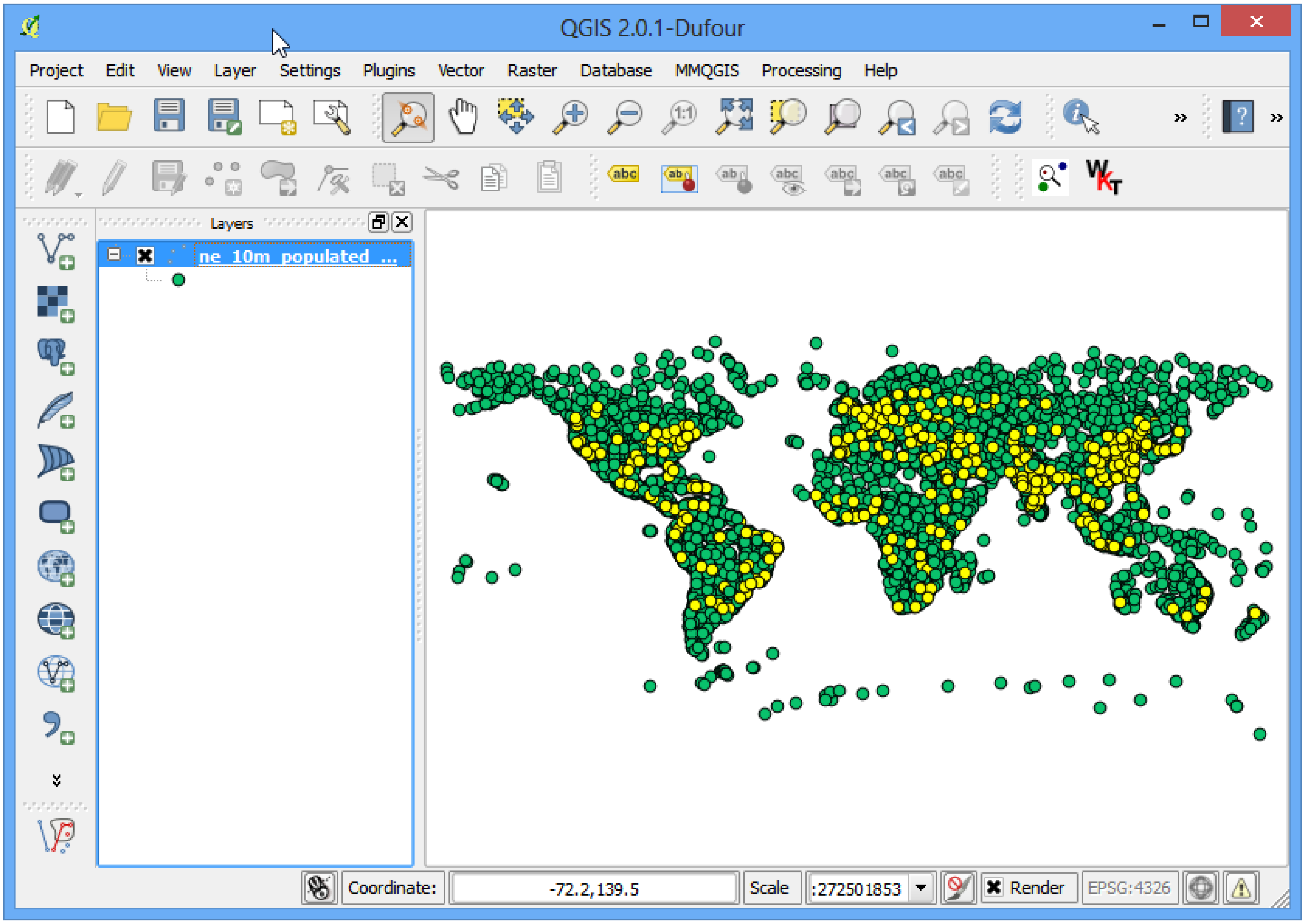
	longitude			diffnote	pop_max	pop_min	pop_other
7312	139.75140742900	0.00000000000	0	NULL	35676000	8336599	12945252
7297	-73.98001692880	0.00000000000	0	NULL	19040000	8008278	9292603
7303	-99.13098820170	0.00000000000	0	NULL	19028000	10811002	10018444
7313	72.85698929740	0.00000000000	0	NULL	18978000	12691836	12426085
7318	-46.62501998040	0.00000000000	0	NULL	18845000	10021295	11522944
7221	77.23000402720	4.00000000000	0	Changed featur...	15926000	7633213	6747384
7311	121.43650467800	0.00000000000	0	NULL	14987000	14608512	16803572
7316	88.32467565810	4.00000000000	1	Name changed...	14787000	4631392	7783716
7248	90.40857946670	5.00000000000	0	Changed scale ...	12797394	7000940	14995538
7290	-58.39753137370	0.00000000000	0	NULL	12795000	10929146	10271457
7295	-118.17998051100	0.00000000000	0	NULL	12500000	3694820	142265
7168	66.99000891000	5.00000000000	0	Changed scale ...	12130000	11624219	11570278
7310	31.24996821970	0.00000000000	0	NULL	11893000	7734614	13720557
7317	-43.22502079420	0.00000000000	0	NULL	11748000	2010175	1821489
7280	135.46014481500	4.00000000000	0	Changed featur...	11294000	2592413	9630783
7306	116.38828568400	0.00000000000	0	NULL	11106000	7480601	9033231
7274	120.98221716200	0.00000000000	0	NULL	11100000	3077575	2381280
7302	37.61552282590	0.00000000000	0	NULL	10452000	10452000	10585385
7299	29.01000158560	0.00000000000	0	NULL	10061000	9945610	9651488
7314	2.33333532574	0.00000000000	0	NULL	9904000	11177	7142744
7273	126.99973099700	0.00000000000	0	NULL	9796000	9796000	12018058
7304	3.39153107121	4.00000000000	0	Location adjust...	9466000	1536	6567892

10. Select By Expression 창에서 Fields and Values`를 확장하고 `pop_max`를 더블클릭합니다. 그러면 아래쪽 표현식에 `pop_max`가 추가된 것을 알 수 있습니다. 만약 필드값이 확실하지 않다면 :guilabel:`Load all unique values 을 클릭해서 데이터셋에 나타난 값을 볼 수 있습니다. 이 예제에서는 1,000,000보다 큰 인구수를 갖는 피처를 찾고자 하는 것입니다. 그래서 표현식을 `"pop_max" > 1000000`와 같이 완성하고 :guilabel:'Select'을 클릭합니다.

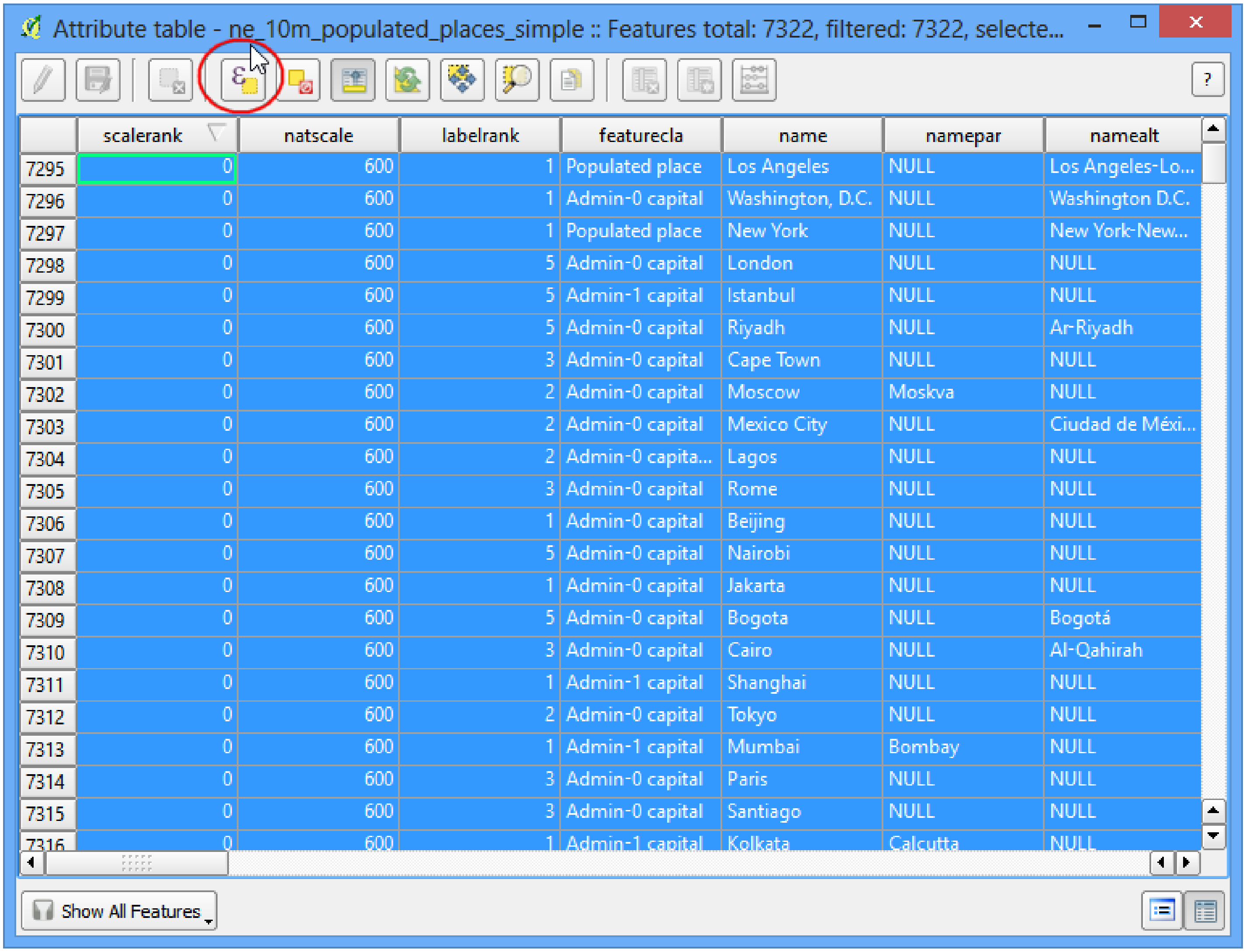

Select By Expression
Function List
Search
Geometry
Record
TimeManager
Fields and Values
scalerank
natscale
labelrank
featurecla
name
namepar
namealt
diffascii
nameascii
adm0cap
Selected Function Help
Field
Double click to add field name to expression string.
Right-Click on field name to open context menu
Field Values
15926000
18845000
18978000
19028000
19040000
35676000
Load all unique values
Load 10 sample values
Operators
=
+
-
/
*
^
||
(
)
Expression
Output preview: 0
Select
Close

"pop_max" > 1000000

11. :guilabel:`Close`를 클릭하고 QGIS 메인으로 되돌아갑니다. 그러면 점 데이터의 일부가 선택되어진 것을 알 수 있습니다. 이것이 조회의 결과이고 데이터셋에서 인구가 1,000,000보다 큰 속성값을 가진 `pop_max`을 볼 수 있습니다.

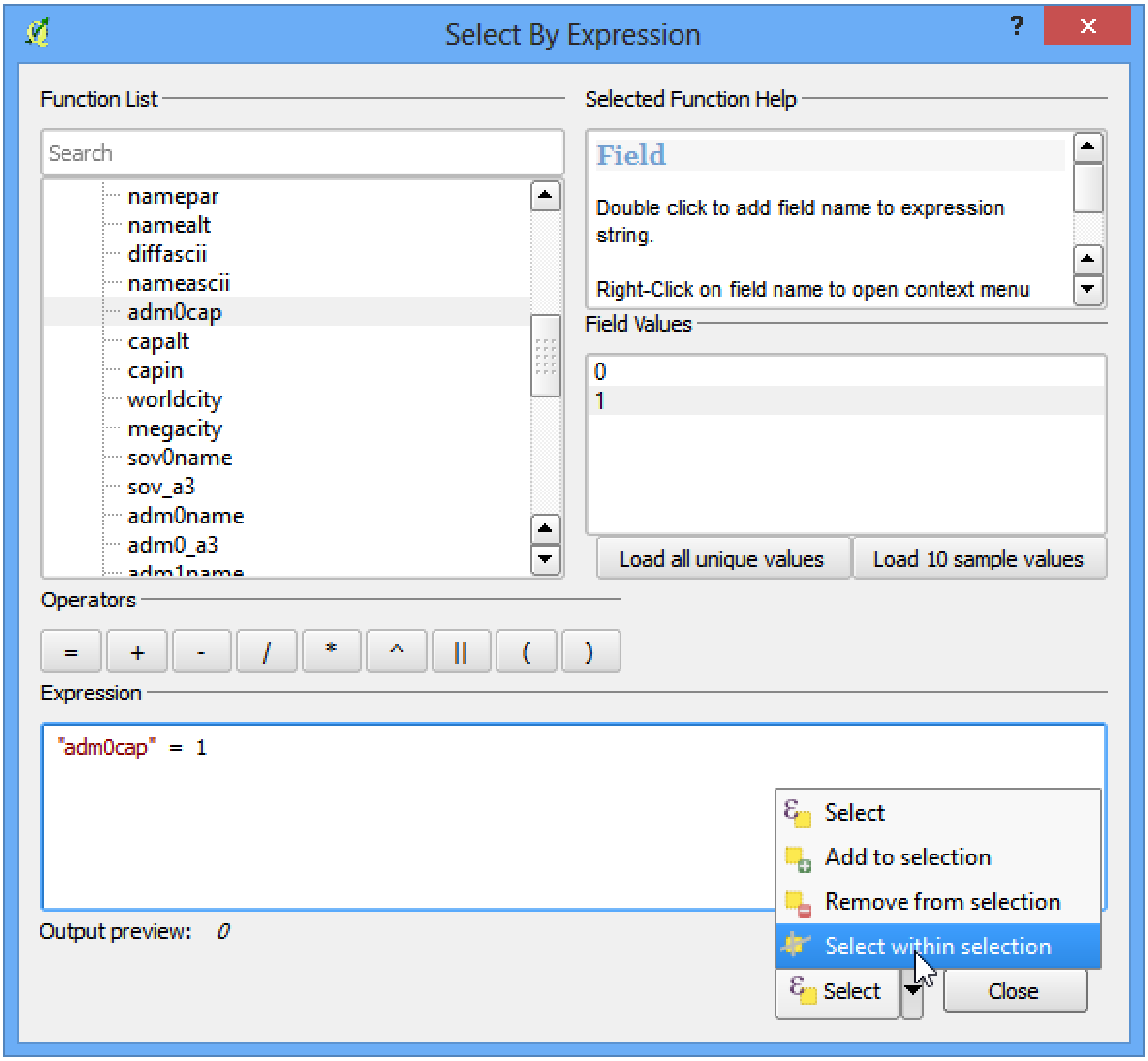

QGIS 2.0.1-Dufour
Project
Edit
View
Layer
Settings
Plugins
Vector
Raster
Database
MMQGIS
Processing
Help
Layers
ne_10m_populated ...
Coordinate:
-72.2,139.5
Scale
:272501853
Render
EPSG:4326

12. 이 예제의 목표는 각 나라의 수도를 찾는 것입니다. 이 데이터셋에서 각 나라의 수도만 다시 조회해 보도록 하겠습니다. 속성테이블에서 Select feature using an expression 버튼을 클릭합니다.


Attribute table - ne_10m_populated_places_simple :: Features total: 7322, filtered: 7322, selecte...
?
Show All Features

	scalerank	natscale	labelrank	featurecla	name	namepar	namealt
7295	0	600	1	Populated place	Los Angeles	NULL	Los Angeles-Lo...
7296	0	600	1	Admin-0 capital	Washington, D.C.	NULL	Washington D.C.
7297	0	600	1	Populated place	New York	NULL	New York-New...
7298	0	600	5	Admin-0 capital	London	NULL	NULL
7299	0	600	5	Admin-1 capital	Istanbul	NULL	NULL
7300	0	600	5	Admin-0 capital	Riyadh	NULL	Ar-Riyadh
7301	0	600	3	Admin-0 capital	Cape Town	NULL	NULL
7302	0	600	2	Admin-0 capital	Moscow	Moskva	NULL
7303	0	600	2	Admin-0 capital	Mexico City	NULL	Ciudad de Méxi...
7304	0	600	2	Admin-0 capita...	Lagos	NULL	NULL
7305	0	600	3	Admin-0 capital	Rome	NULL	NULL
7306	0	600	1	Admin-0 capital	Beijing	NULL	NULL
7307	0	600	5	Admin-0 capital	Nairobi	NULL	NULL
7308	0	600	1	Admin-0 capital	Jakarta	NULL	NULL
7309	0	600	5	Admin-0 capital	Bogota	NULL	Bogotá
7310	0	600	3	Admin-0 capital	Cairo	NULL	Al-Qahirah
7311	0	600	1	Admin-1 capital	Shanghai	NULL	NULL
7312	0	600	2	Admin-0 capital	Tokyo	NULL	NULL
7313	0	600	1	Admin-1 capital	Mumbai	Bombay	NULL
7314	0	600	3	Admin-0 capital	Paris	NULL	NULL
7315	0	600	3	Admin-0 capital	Santiago	NULL	NULL
7316	0	600	1	Admin-1 capital	Kolkata	Calcutta	NULL

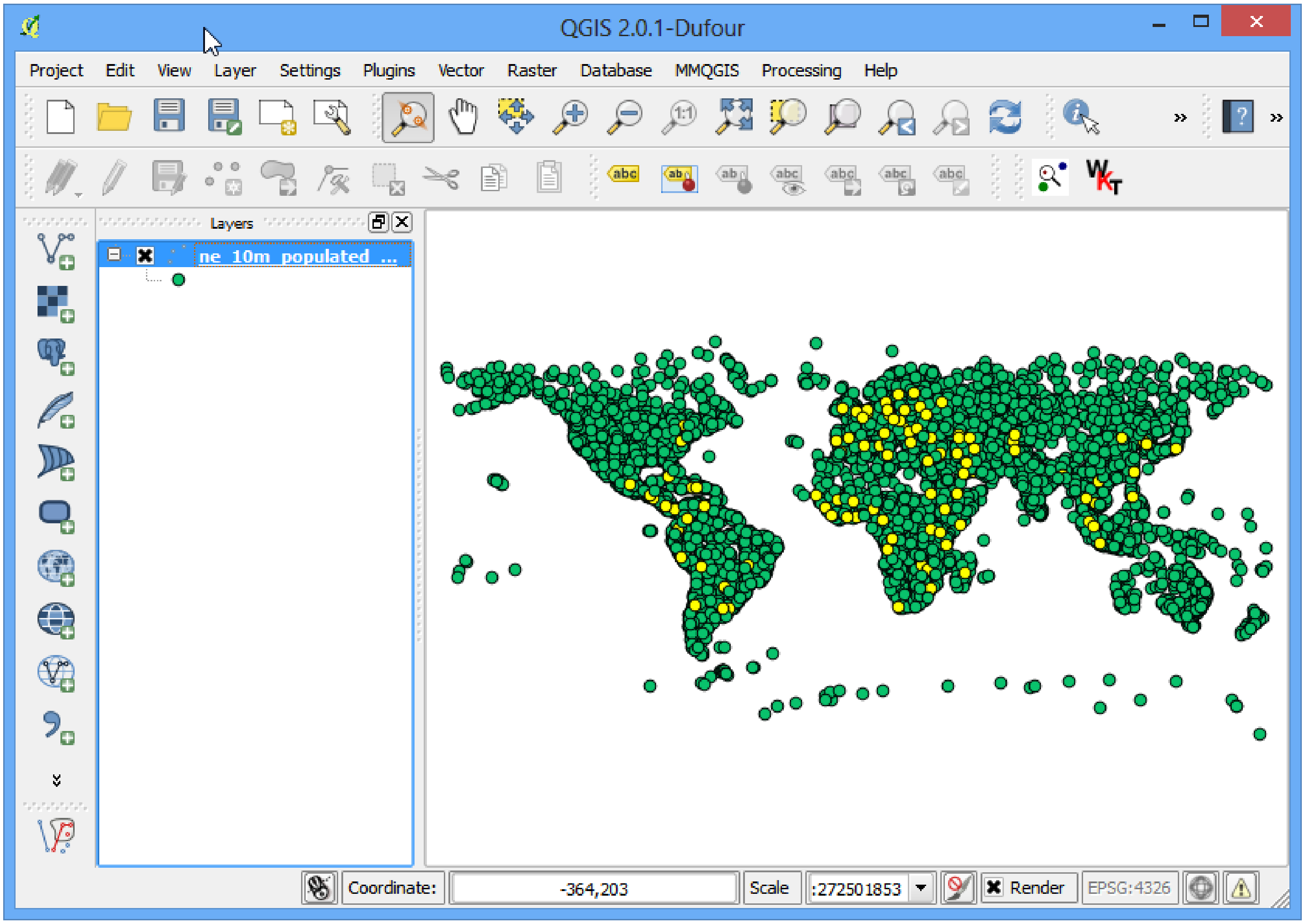
13. 데이터는 `adm0cap` 필드를 포함하고 있습니다. 값 '1'은 장소가 수도임을 의미합니다. 표현식을 `"adm0cap" = 1`라고 입력합니다. 바로 직전의 조회 결과 안에서만 데이터를 찾고자 하는 것이므로 :guilabel:`Select within selection'를 클릭합니다.


Select By Expression
Function List
Search
namepar
namealt
diffascii
nameascii
adm0cap
capalt
capin
worldcity
megacity
sov0name
sov_a3
adm0name
adm0_a3
adm1name
Selected Function Help
Field
Double click to add field name to expression string.
Right-Click on field name to open context menu
Field Values
0
1
Load all unique values
Load 10 sample values
Operators
=
+
-
/
*
^
||
(
)
Expression
Select
Add to selection
Remove from selection
Select within selection
Select
Close

"adm0cap" = 1

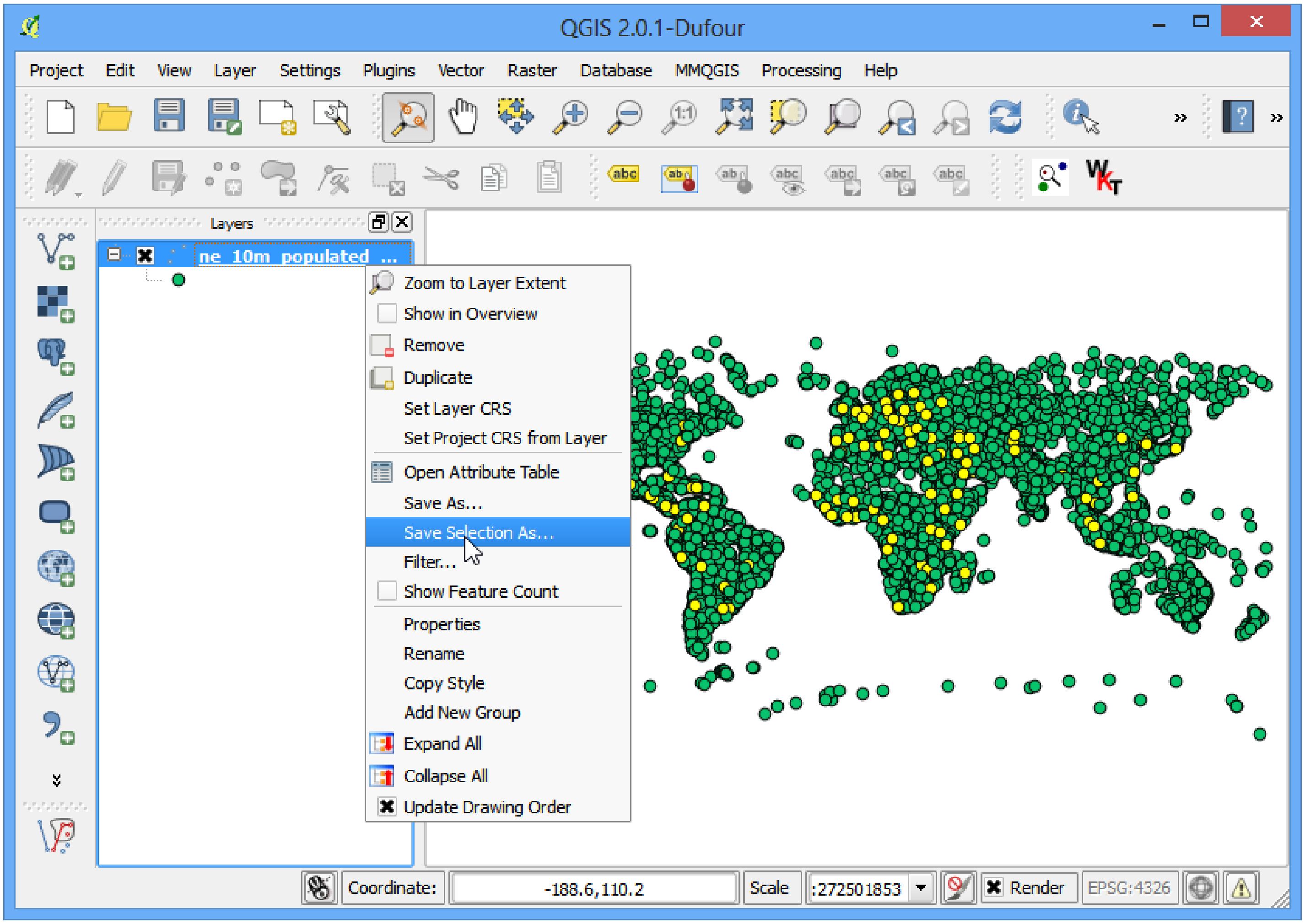
Output preview: *0*

14. :guilabel:`Close`를 클릭하고 QGIS 메인으로 되돌아갑니다. 그러면 보다 작 데이터셋이 선택된 것을 볼 수 있습니다. 이것이 두번째 조회 결과이며 데이터셋에서 인구가 1,000,000명을 초과하는 그 나라의 수도를 보여줍니다.

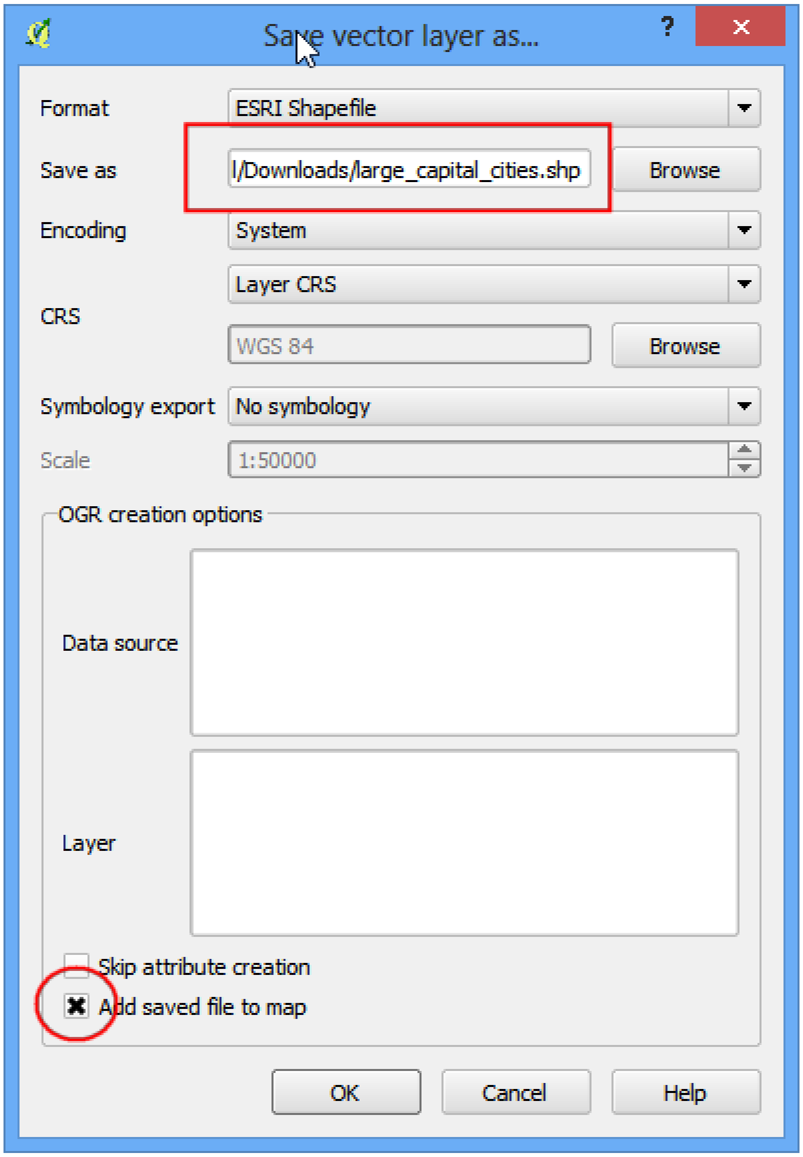

QGIS 2.0.1-Dufour
Project
Edit
View
Layer
Settings
Plugins
Vector
Raster
Database
MMQGIS
Processing
Help
Layers
ne_10m_populated ...
Render

Coordinate: -364,203
Scale :272501853
EPSG:4326

15. 이 결과를 별도의 레이어로 저장해 봅시다 . 레이어에서 마우스 오른쪽 버튼을 클릭하고 :guilabel:`Save Selection As` 를 선택하십시오 .

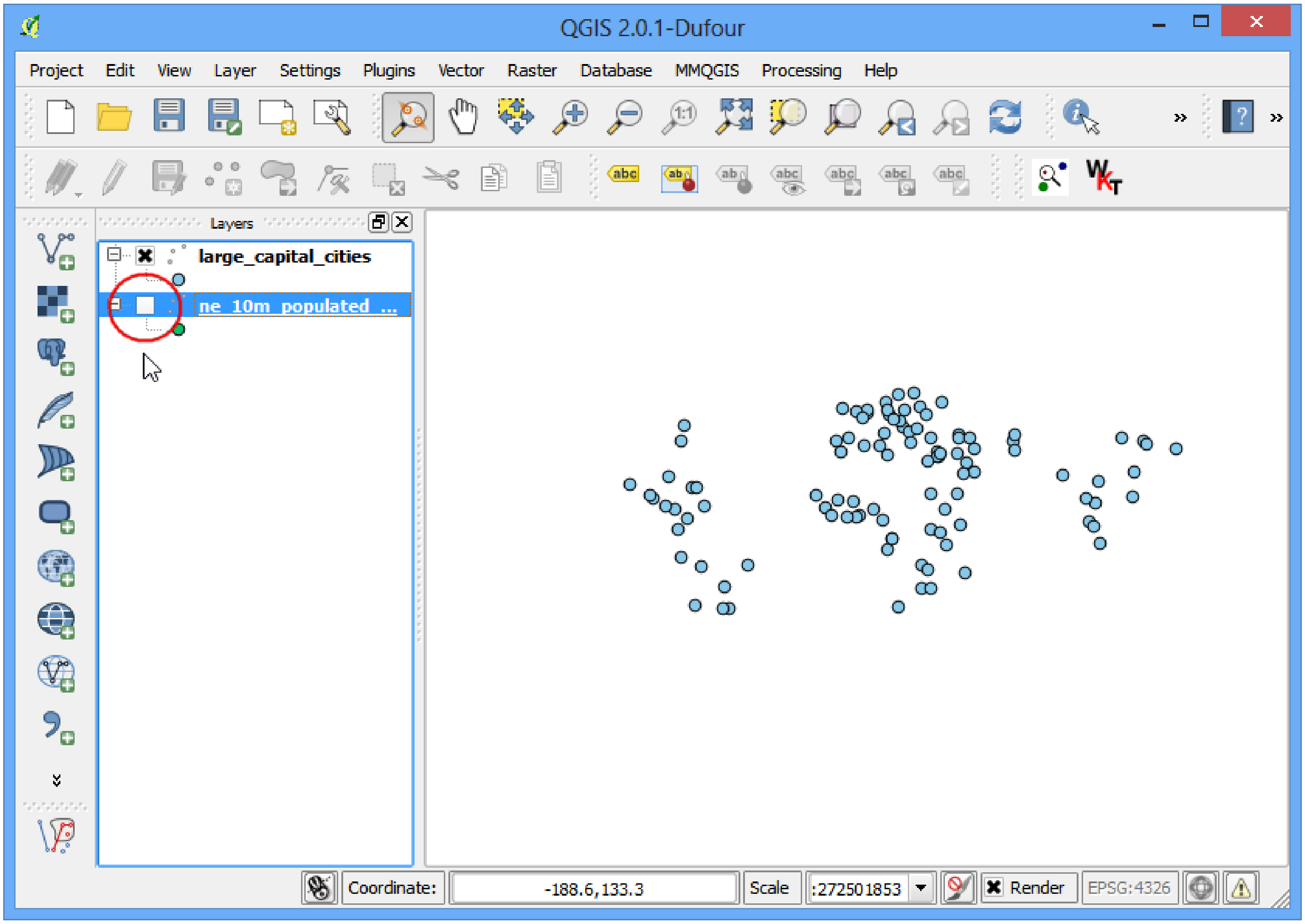

QGIS 2.0.1-Dufour
Project
Edit
View
Layer
Settings
Plugins
Vector
Raster
Database
MMQGIS
Processing
Help
Layers
ne_10m_populated ...
Zoom to Layer Extent
Show in Overview
Remove
Duplicate
Set Layer CRS
Set Project CRS from Layer
Open Attribute Table
Save As...
Save Selection As...
Filter...
Show Feature Count
Properties
Rename
Copy Style
Add New Group
Expand All
Collapse All
Update Drawing Order
Coordinate:
-188.6,110.2
Scale
:272501853
Render
EPSG:4326

16. `ESRI 파일 형식 ESRI Shapefile'을 유지하고 출력파일을 `large_capital_cities.shp` 로 새 이름으로 저장합니다. :guilabel:`Add saved file to map'박스에 클릭하고 :guilabel:'OK'를 클릭합니다.


Save vector layer as...
?
Browse
Browse
OK
Cancel
Help

Format: ESRI Shapefile
Save as: l/Downloads/large_capital_cities.shp
Encoding: System
CRS: Layer CRS
WGS 84
Symbology export: No symbology
Scale: 1:50000
OGR creation options
Data source
Layer
☐ Skip attribute creation
☒ Add saved file to map

17. 새롭게 만들어진 세이프파일이 자동적으로 QGIS로 로딩됩니다. ne_10m_populated_places_simple 레이어를 해제합니다. 그러면 인구 1,000,000명을 초과하는 세계의 수도가 포함된 새로운 레이어를 보게 될 것입니다.


QGIS 2.0.1-Dufour
Project
Edit
View
Layer
Settings
Plugins
Vector
Raster
Database
MMQGIS
Processing
Help
Layers
large_capital_cities
ne_10m_populated ...
Render
EPSG:4326

Coordinate: -188.6,133.3

Scale :272501853