

# Creating Heatmaps

## QGIS Tutorials and Tips



Author

Ujaval Gandhi

<http://google.com/+UjavalGandhi>

Translations by

SongHyun Choi

클러스터 분석은 데이터의 유사성을 기반으로 그룹을 형성하는 방법이다. 클러스터 분석은 핫스팟 분석과 유사하지만, 핫스팟 분석은 공간적 패턴을 식별하는 데 더 특화되어 있다.



□ □ □ □ □ **2011** □ □ **Surrey** □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □  
□ □ □ □ □ □ □ □ □ □.

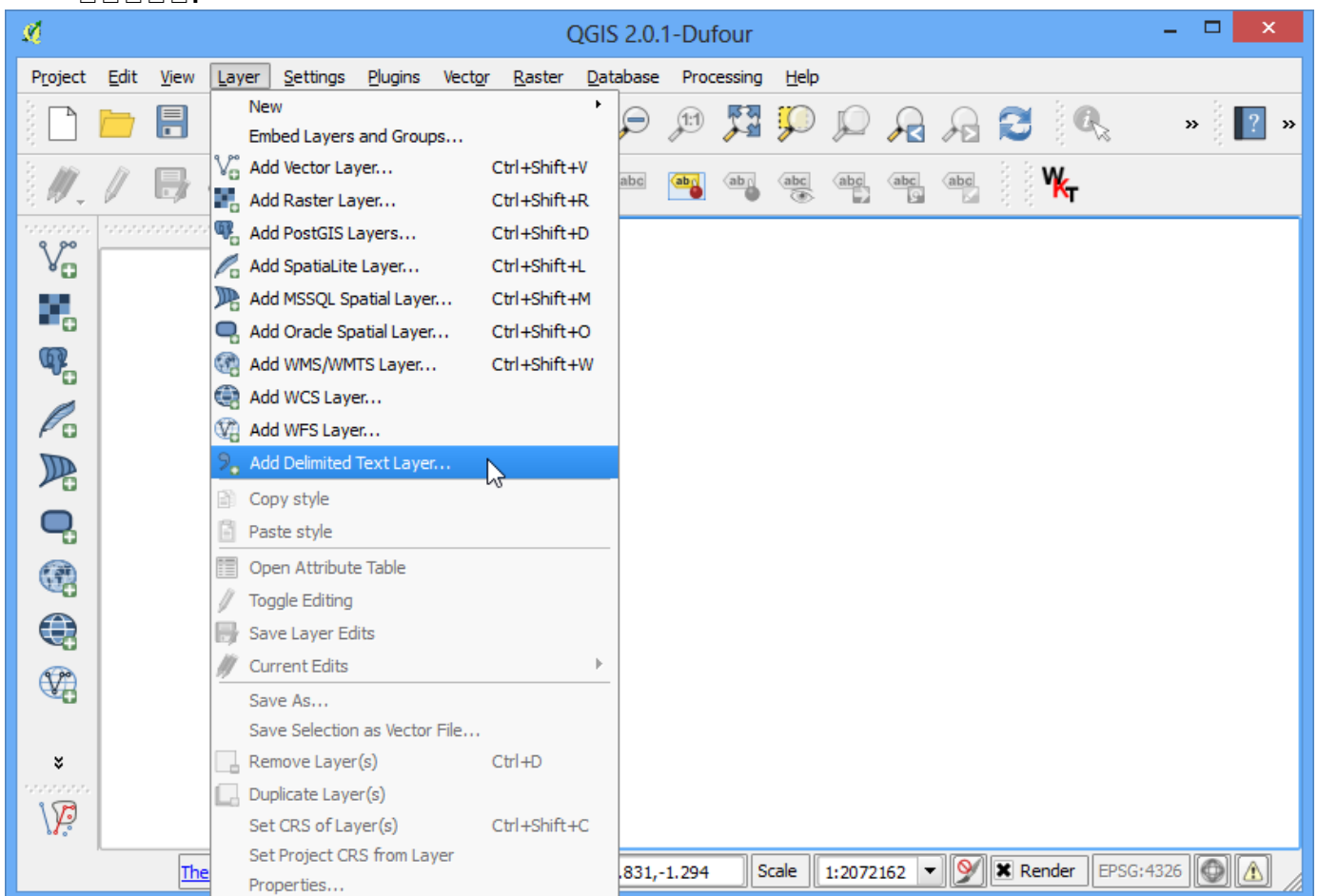


raw data from the Police.uk crime mapping website  
<<http://data.london.gov.uk/datastore/package/policeuk-crime-data>>\_

Download the [Surrey data](#).

11

- ```
1. #####  ###  ##  #####. ##### CSV#####  ##  #####. QGIS# #  #####
#####(#####  :doc:`importing_spreadsheets_csv`#  #####). ##  ##### -->
#####  ###  ##  ##### :menuselection:`Layer --> Add Delimited Text Layer`#
#####.
```



2. ☐ ☐ ☐ ☐ police-uk-crime-data-surrey.txt ☐ ☒ ☐ ☐ :guilabel:`CSV  
 (comma separated values)` ☐ ☐ ☐ \*Easting\* ☐ \*Northing\* ☐ ☐ X ☐ Y ☐  
☐ ☐ ☐ ☐ ☐ . ☐ ☐ ☐ ☐ :guilabel:`Use spatial index` ☐ ☐ ☐
- ☐ ☐ ☐ . ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ :guilabel:`~OK` ☐ ☐.

**Create a Layer from a Delimited Text File**

File Name:

Layer name:  Encoding:

File format: ☒ CSV (comma separated values) ☐ Custom delimiters ☐ Regular expression delimiter

Record options: Number of header lines to discard:  ☒ First record has field names

Field options: ☐ Trim fields ☐ Discard empty fields ☐ Decimal separator is comma

Geometry definition: ☒ Point coordinates ☐ Well known text (WKT) ☐ No geometry (attribute only table)

X field:  Y field:  ☐ DMS coordinates

Layer settings: ☒ Use spatial index ☐ Use subset index ☐ Watch file

|   | ID     | Month   | Reported by   | Falls within  | Easting   | Northing  | Location                  | Crime type | Conte |
|---|--------|---------|---------------|---------------|-----------|-----------|---------------------------|------------|-------|
| 1 | 480097 | 2010-12 | Surrey Police | Surrey Police | 532773.00 | 156680.00 | On or near Addison Road   | Burglary   |       |
| 2 | 480098 | 2010-12 | Surrey Police | Surrey Police | 498361.00 | 149806.00 | On or near The Oval       | Burglary   |       |
| 3 | 480099 | 2010-12 | Surrey Police | Surrey Police | 498205.00 | 165251.00 | On or near Albury Close   | Burglary   |       |
| 4 | 480100 | 2010-12 | Surrey Police | Surrey Police | 507437.00 | 174069.00 | On or near Sanctuary Road | Burglary   |       |
| 5 | 480101 | 2010-12 | Surrey Police | Surrey Police | 498205.00 | 165251.00 | On or near Albury Close   | Burglary   |       |

3. `guiLabel: 'Close'`

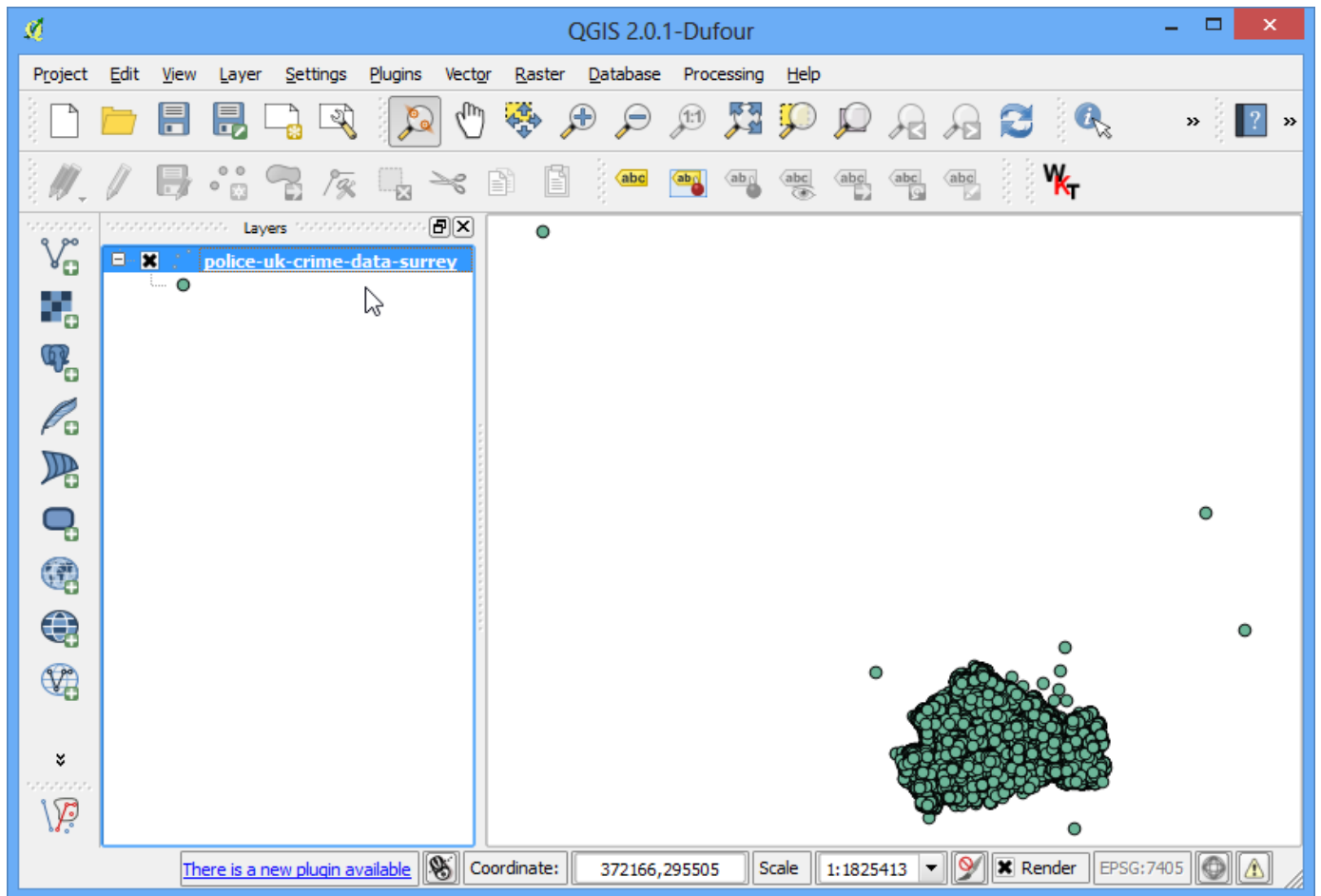
**Delimited text file errors**

Errors in file C:/Users/ujaaval/Downloads/police-uk-crime-data-surrey/police-uk-crime-data-surrey.txt  
1969 records discarded due to missing geometry definitions

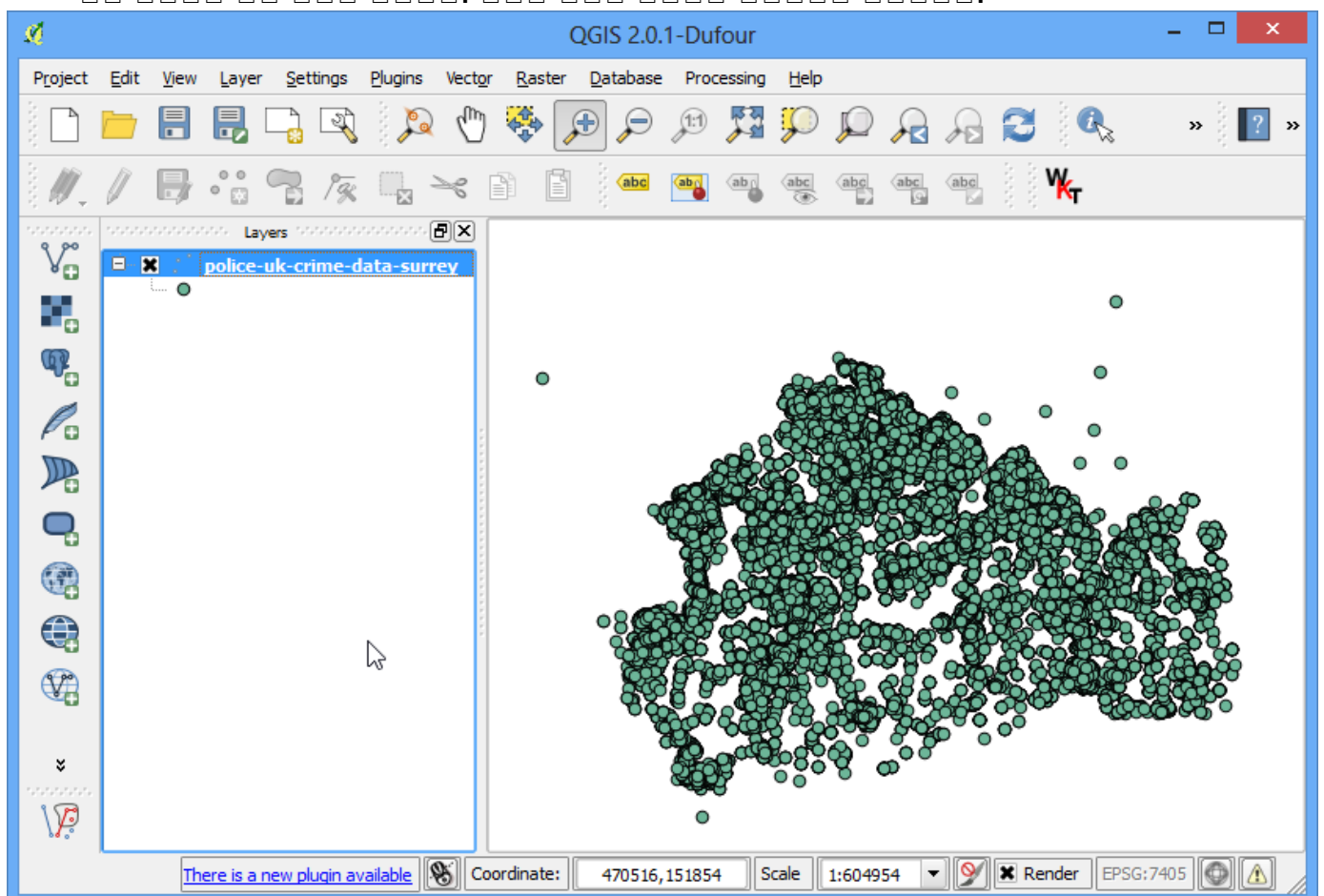
4. `guiLabel: 'OSGB 1936 / British National Grid'`



5. □□ QGIS □ □□□ □□□□□ □ □ □□□.



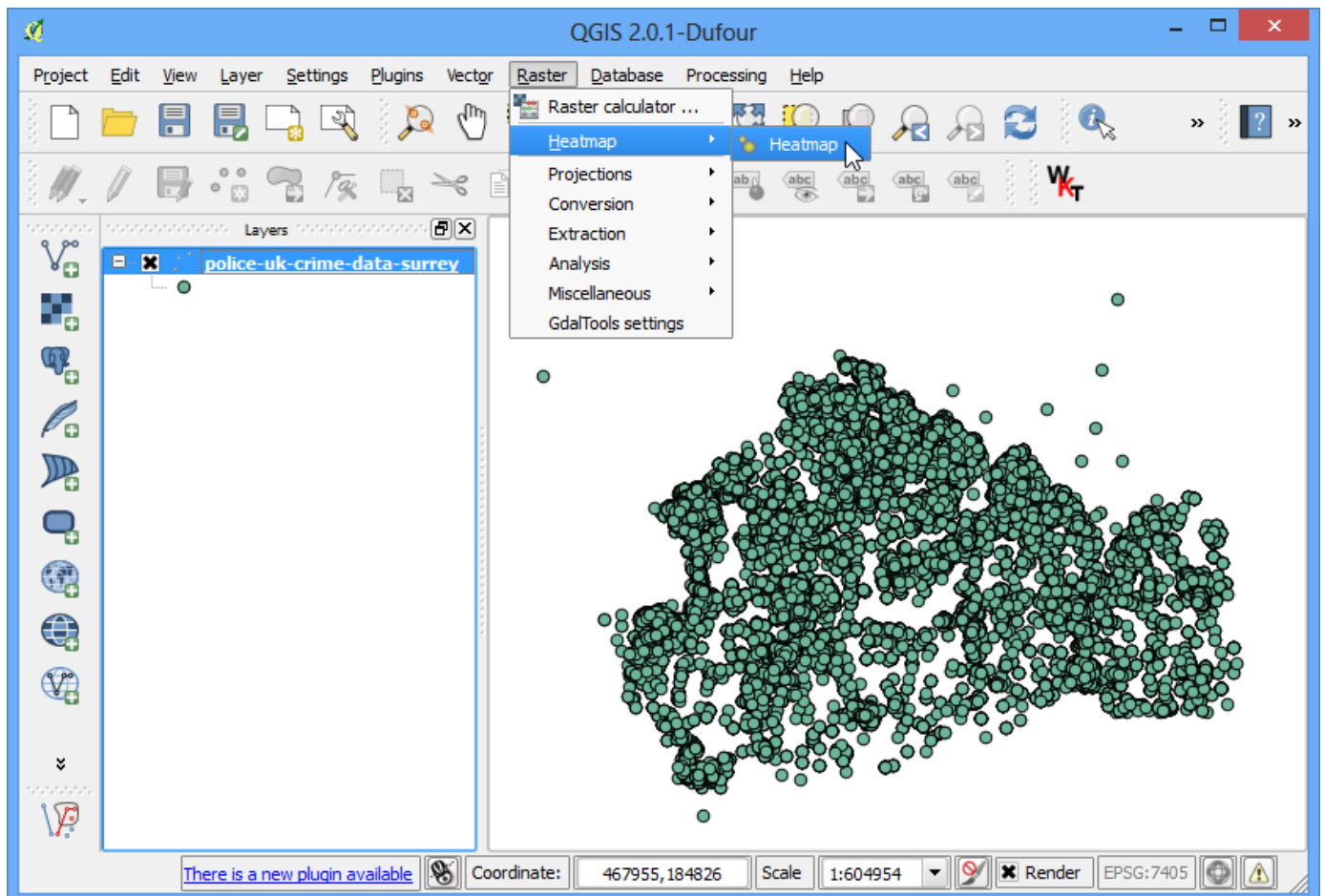
6. □□□□ □ □ □□ □□ □□ □□ □□. □□□□ □□ □□□□ □□ □□ □□ □□ □□ □□ □□ □□ □□ □□ □□□□. □□ □□ □□□□ □□□□ □□□□.



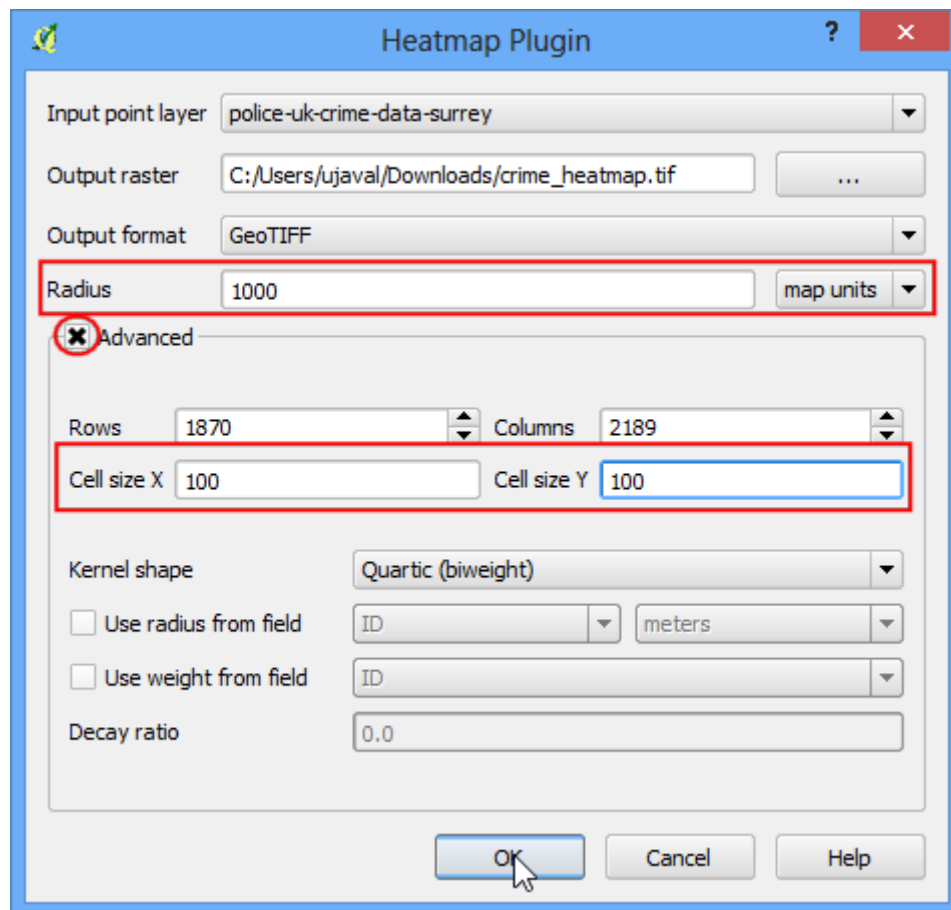
7. To create the heatmap, you need to enable a core plugin named *Heatmap*. See [this post](#) to know how to enable built-in plugins. Once you have enabled the plugin, go to Raster › Heatmap › Heatmap.

## Warning

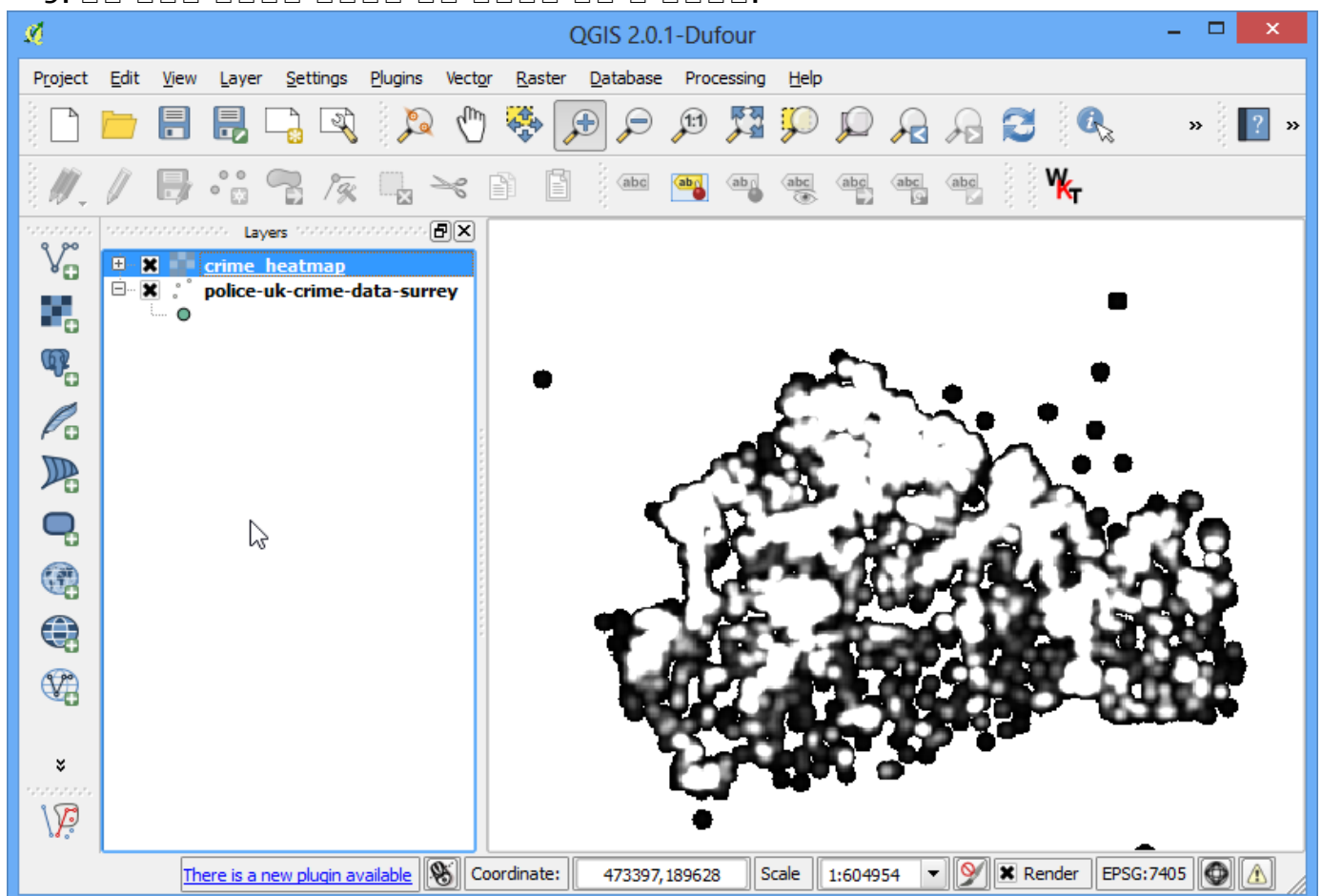
The Heatmap plugin has a bug in QGIS 2.8.1. See [this post](#) for workarounds.



8. `guiabel: `Heatmap Plugin`` `guiabel: `Output raster`` `crime_heatmap`` `guiabel: `Radius`` `1000`` `heat`` `guiabel: `Advanced`` `guiabel: `Cell Size X`` `100`` `guiabel: `Cell Size Y`` `100`` `guiabel: `OK``

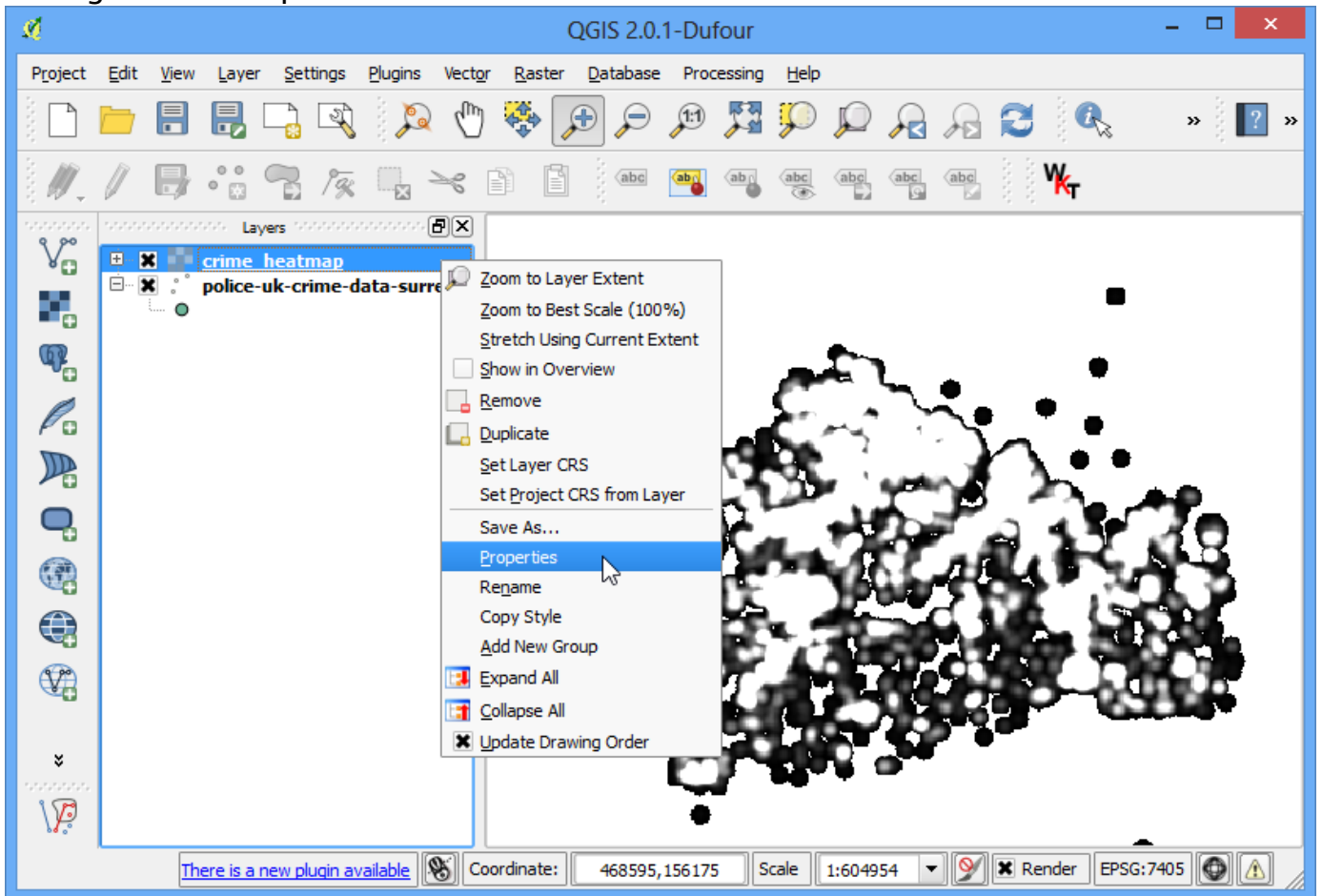


9. □□ □□□ □□□□ □□□□ □□ □□□□ □□ □ □□□□.





10. Click on the 'Properties' button in the Layer Properties dialog box.



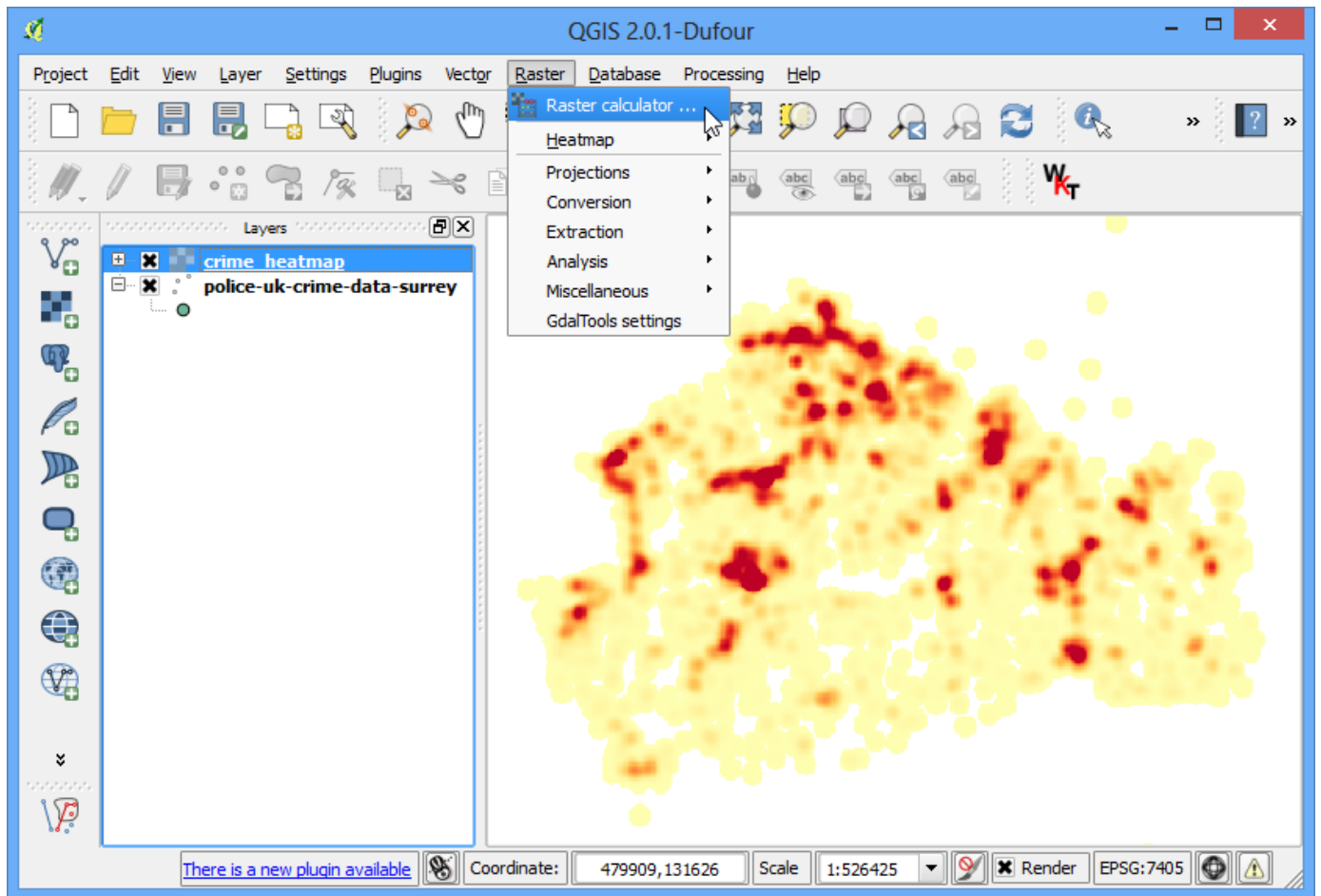
11. Click on the 'Render' button in the Layer Properties dialog box. The 'Render' button is located in the 'Style' tab. The 'Render' button is located in the 'Style' tab. The 'Render' button is located in the 'Style' tab.



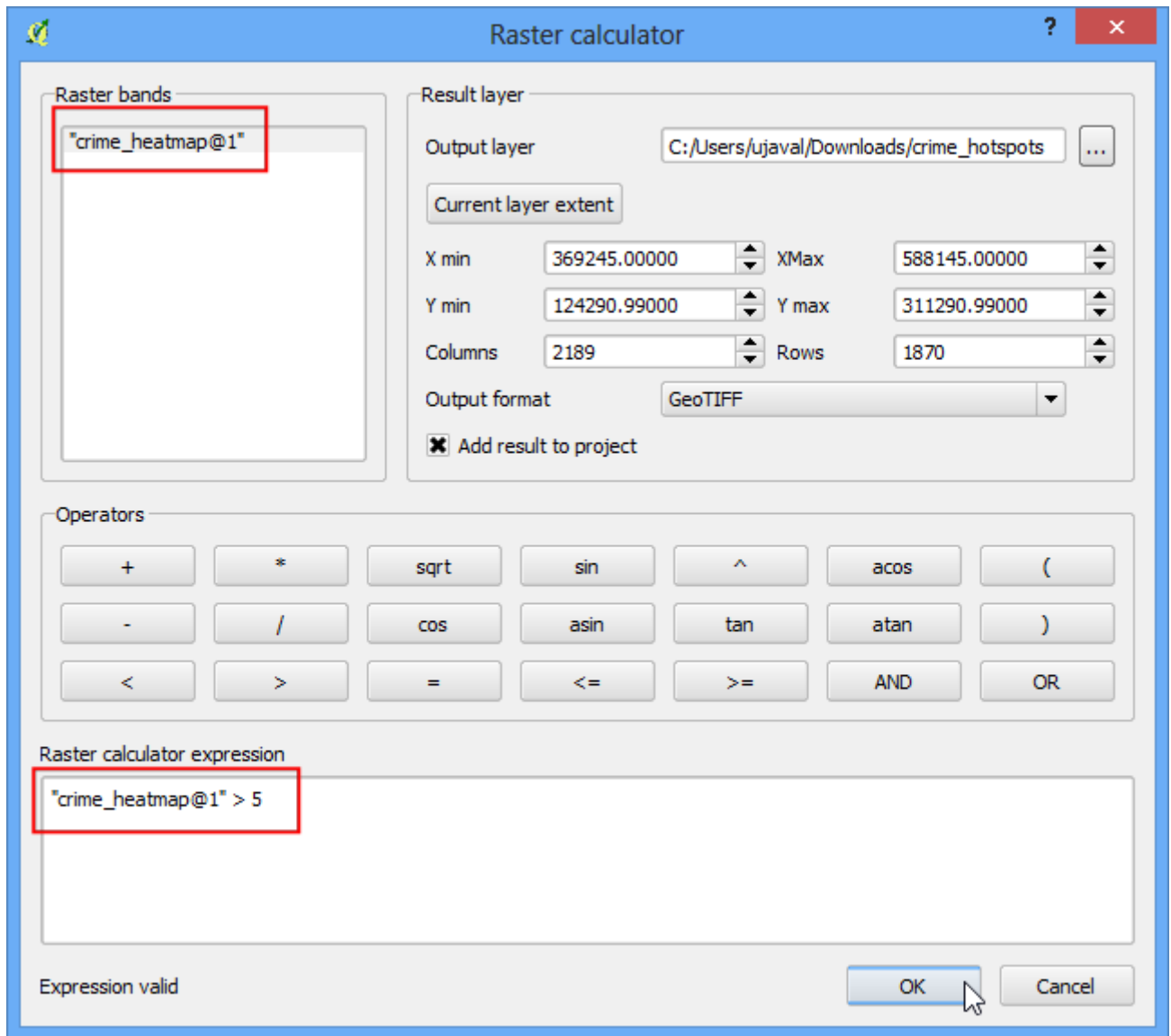




13. □□ □□□□ □□□□□□. □□□ □□□ □□□ □□□□□. □□□ □□□ □ □□□ □□□□□□ □□□□ □□□□. □□□ □□ □□ □□□ □ □ **hotspots** □ □□□□□ □□□□□. □ □□□□ □□□ **hotspots** □ □□□□□ □□□□□□. □□ □□□ --> □□□ □□□ :menuselection: `Raster --> Raster Calculator` □ □□□□.



14. `crime_hotspots` Raster calculator `crime_hotspots` `crime_heatmap@1` Raster calculator expression `"crime_heatmap@1" > 5` `Add result to project` `OK`



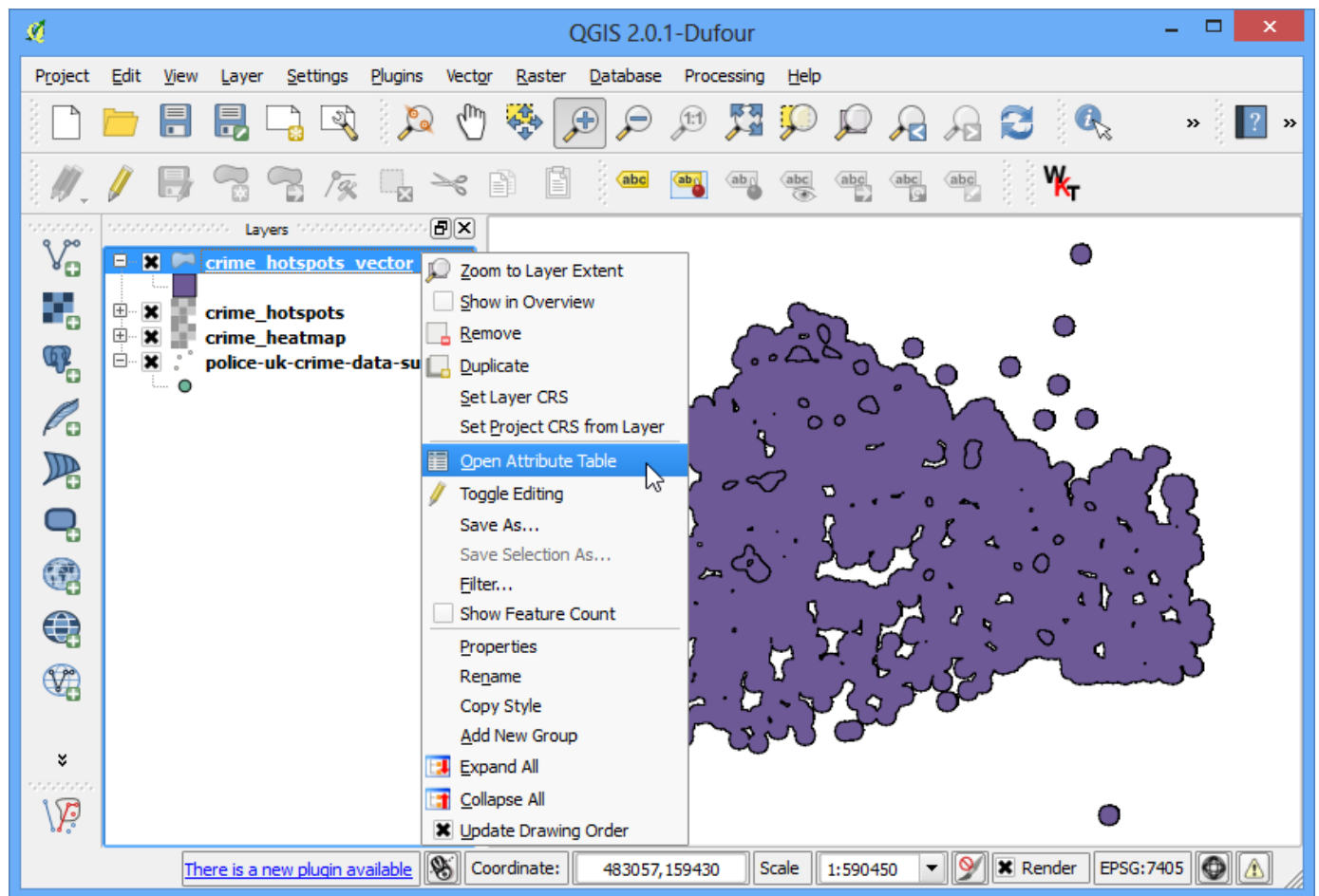
15. QGIS में दिए गए डाटा से crime\_hotspots नाम का वेक्टर लेयर बनाने के लिए निम्नलिखित स्टेप्स फॉलो करें:
1. Raster calculator में जाएें।
  2. Expression में '"crime\_heatmap@1" > 5' टाइप करें।
  3. Output layer में 'C:/Users/ujaval/Downloads/crime\_hotspots' पथ दर्ज करें।
  4. Output format में 'GeoTIFF' सेलेक्ट करें।
  5. 'Add result to project' चेक करें।
  6. 'OK' बटन पर क्लिक करें।



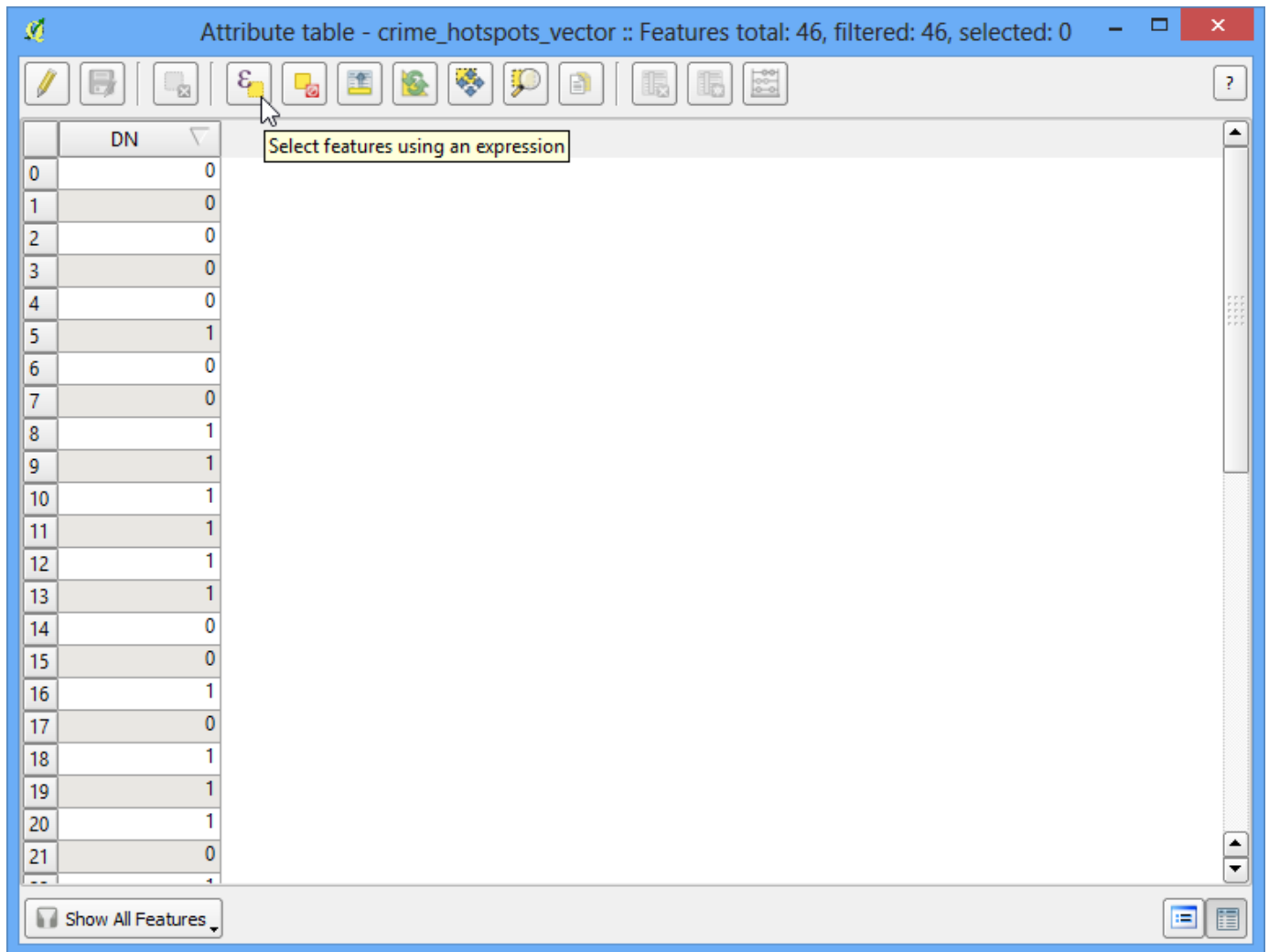
16. Click on crime\_hotspots\_vector` in the Layers panel. Click on :guilabel:`Field name` in the Polygonize dialog box. Click on :guilabel:`Load into canvas when finished` in the Polygonize dialog box. Click on :guilabel:`OK` in the Polygonize dialog box.



17. Click on the 'crime\_hotspots\_vector' layer in the Layers panel. Click on 'Open Attribute Table' in the context menu. Click on '0' in the attribute table. Click on '1' in the attribute table. Click on '0' in the attribute table. Click on 'Open Attribute Table' in the context menu. Click on '0' in the attribute table.

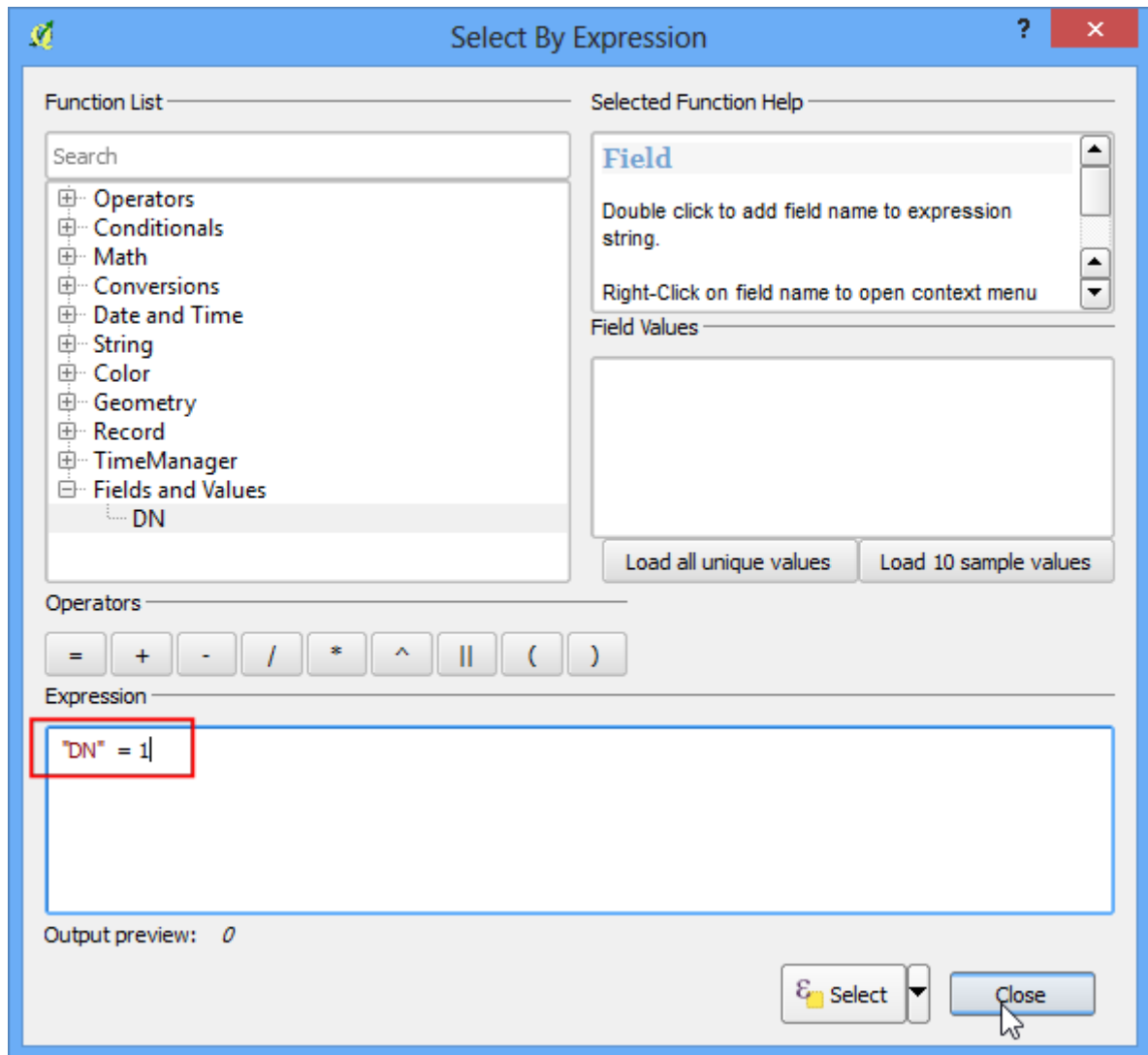


18. `guiabel: `Attribute table`` `guiabel: `Select feature using an expression``



19. `int DN = 1;` `int` `DN` `:``guiLabel``:` `Select` `:``guiLabel``:` `Close` `:``guiLabel``:`





20. QGIS の「Select By Expression」ダイアログボックスのスクリーンショット。左側の「Function List」で「Fields and Values」が選択されており、その下に「DN」がリストアップされている。中央の「Expression」フィールドには「"DN" = 1」と入力されている。右側の「Selected Function Help」パネルには「Field」関数の説明が表示されている。下部には「Output preview」があり、0 と表示されている。右下には「Select」と「Close」のボタンがある。





