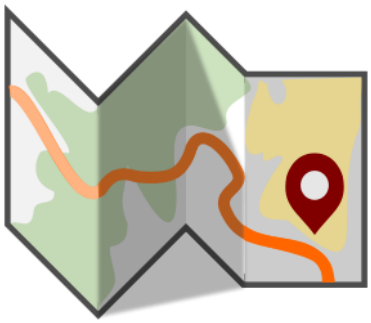
Basic Raster Styling and Analysis

QGIS Tutorials and Tips



Author
Ujaval Gandhi
http://google.com/+UjavalGandhi

Translations by
SongHyun Choi

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□ □□□□□ Columbia University□ Gridded Population of the World (GPW) v3 □□□□□ □□□ □□□□. □□, 1990□□ 2000□ □□□ ASCII □□□ □ □□□ □□□□ □□□ □□□□ □□□□□.

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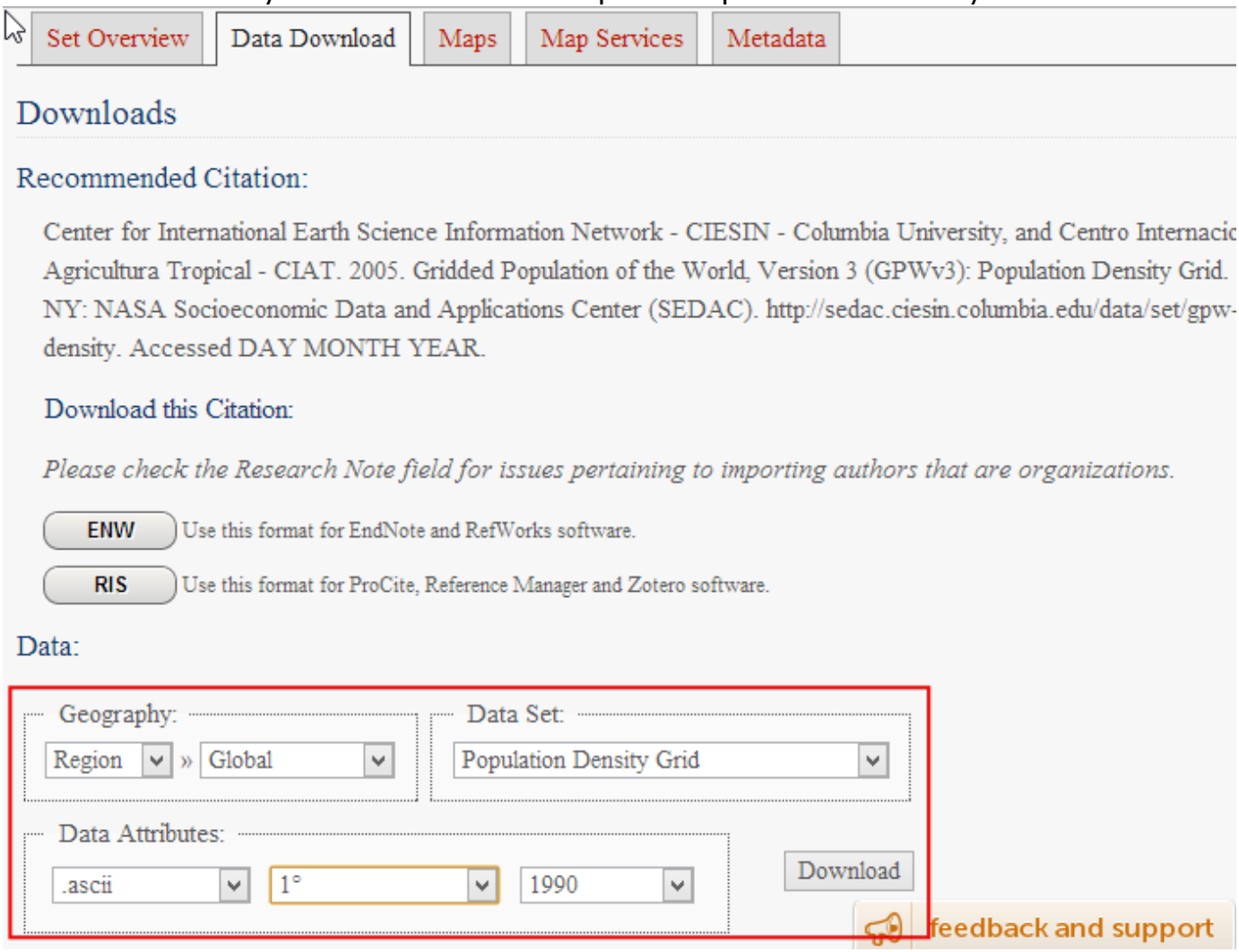
1. Go to the Population Density Grid, v3 download page. Select the Data Attributes as .ascii format, 1° resolution and 1990 year. Click Download. At this point, you may create a free account and login, or use the Guest Download button at the bottom to immediately download the data. Repeat the process for 2000 year data.



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□□□ □□ [GPW3]

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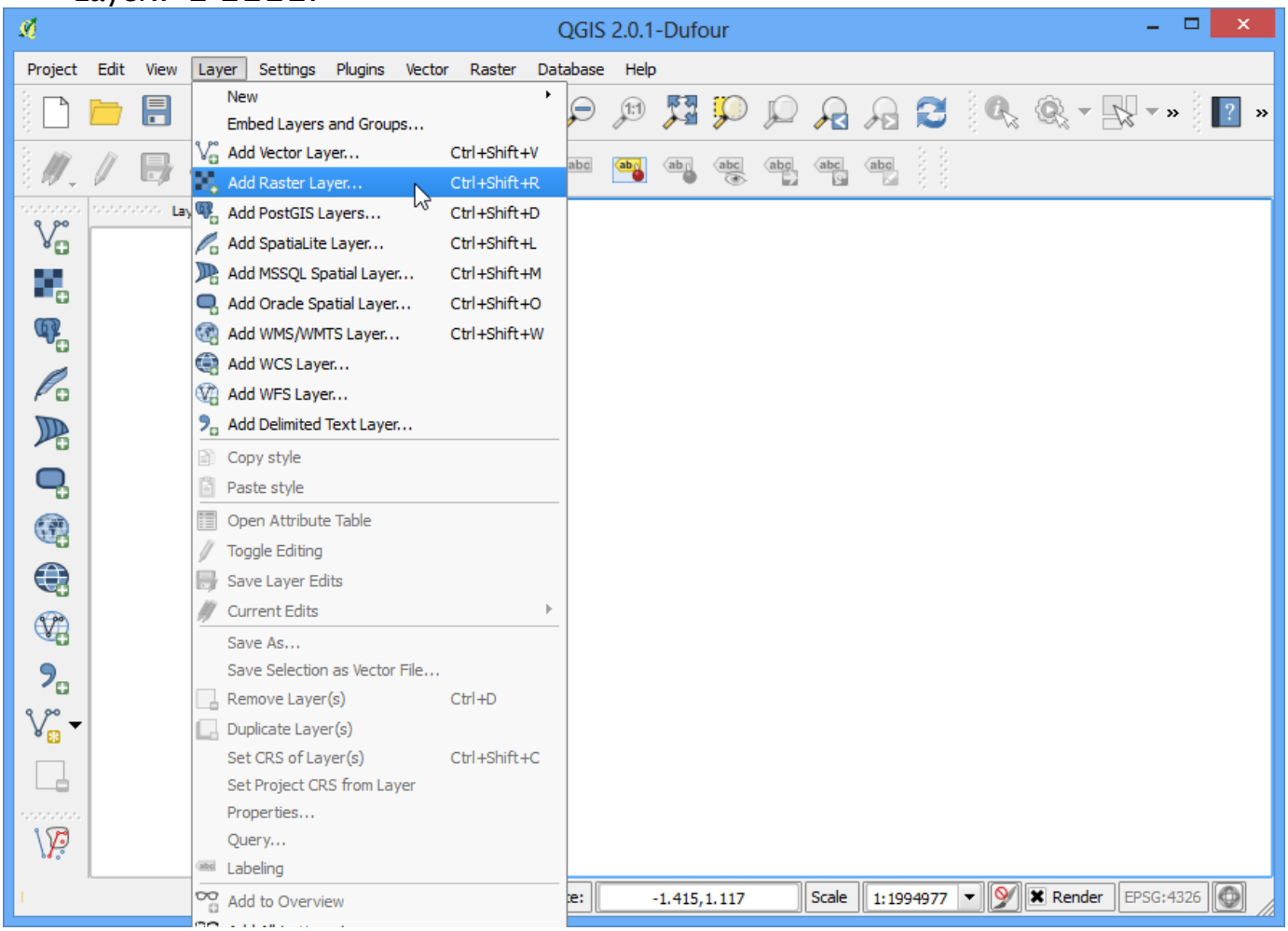
2. QGIS□ □□□□□ □□ □□□ --> □□□ □□□ □□ :menuselection:`Layer --> Add Raster Layer..`□ □□□□.



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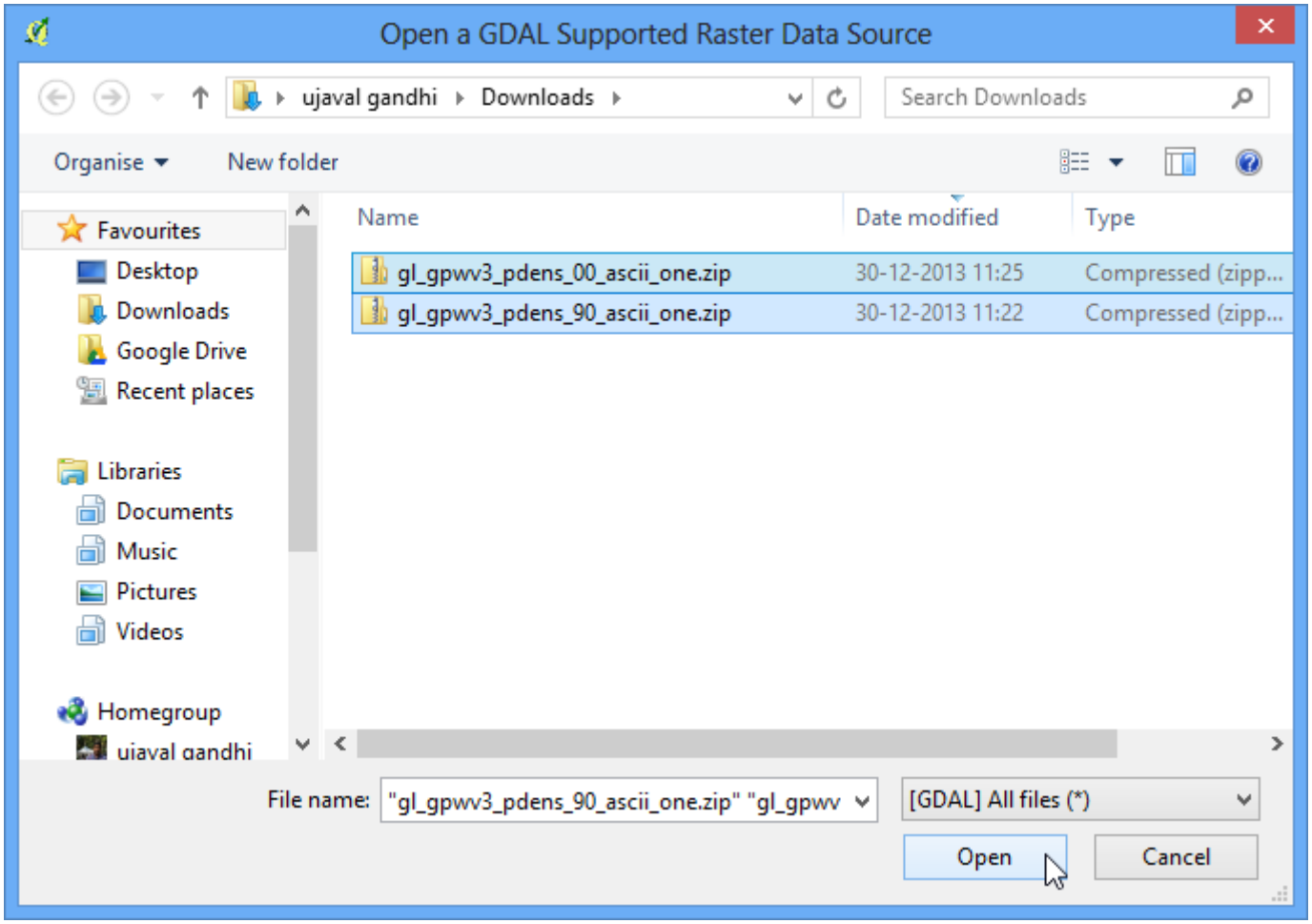

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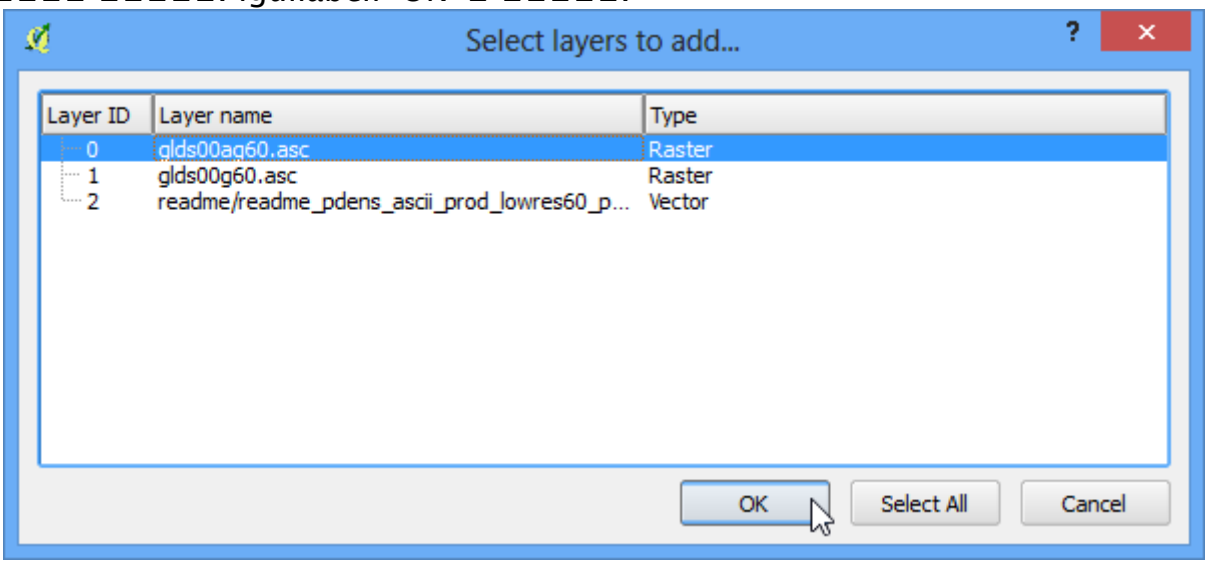
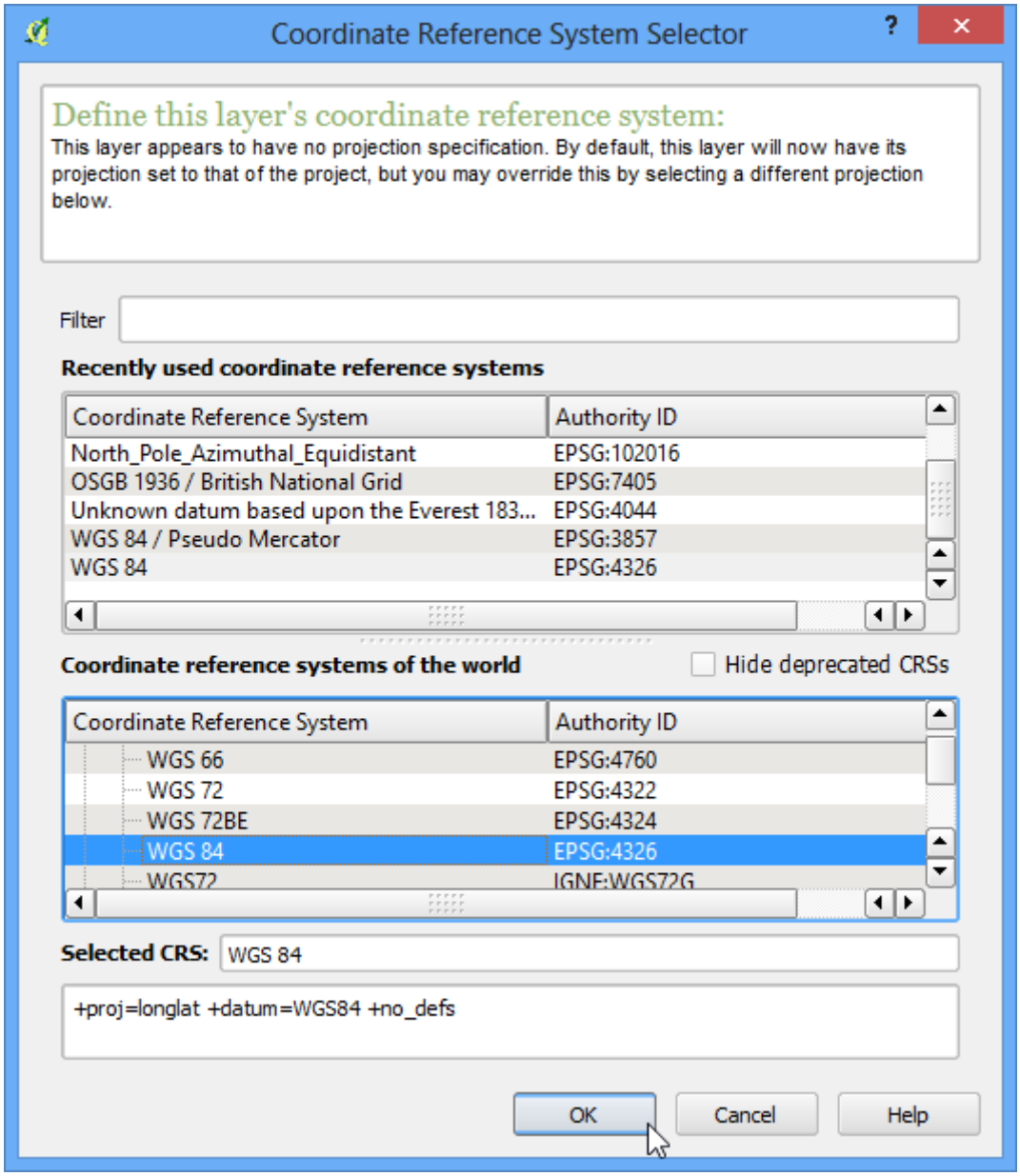


5. □□□□□ □□□□ CRS□ □□ □□ □□□□□. □□□□ □□□□□ □□/□□□□□□ □□□□□□ `EPSG:4326`□ □□□□□□.



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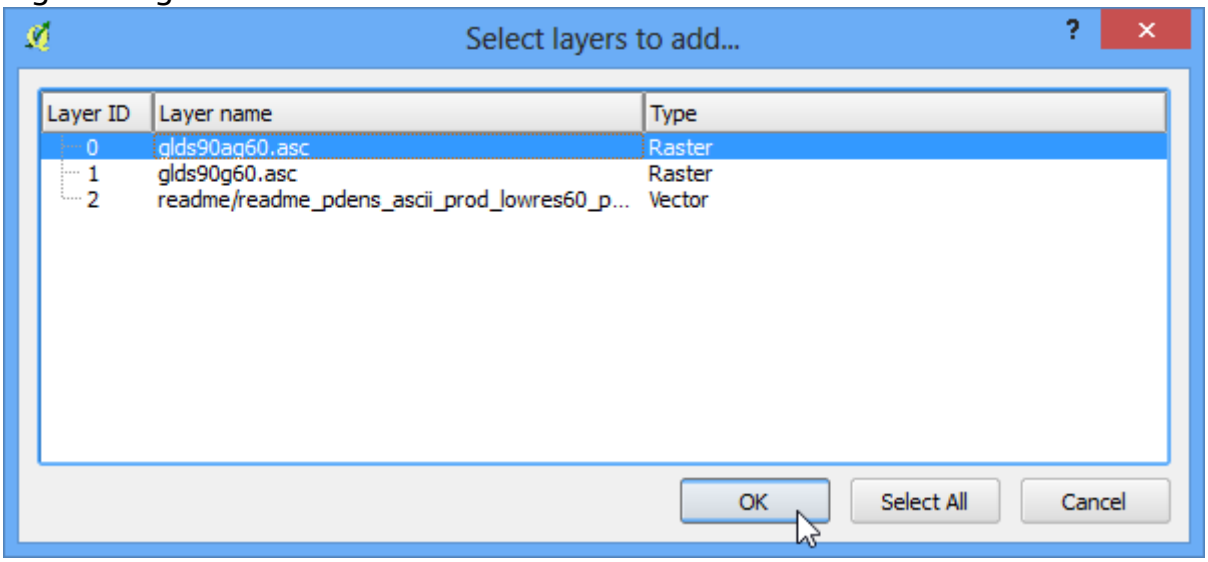
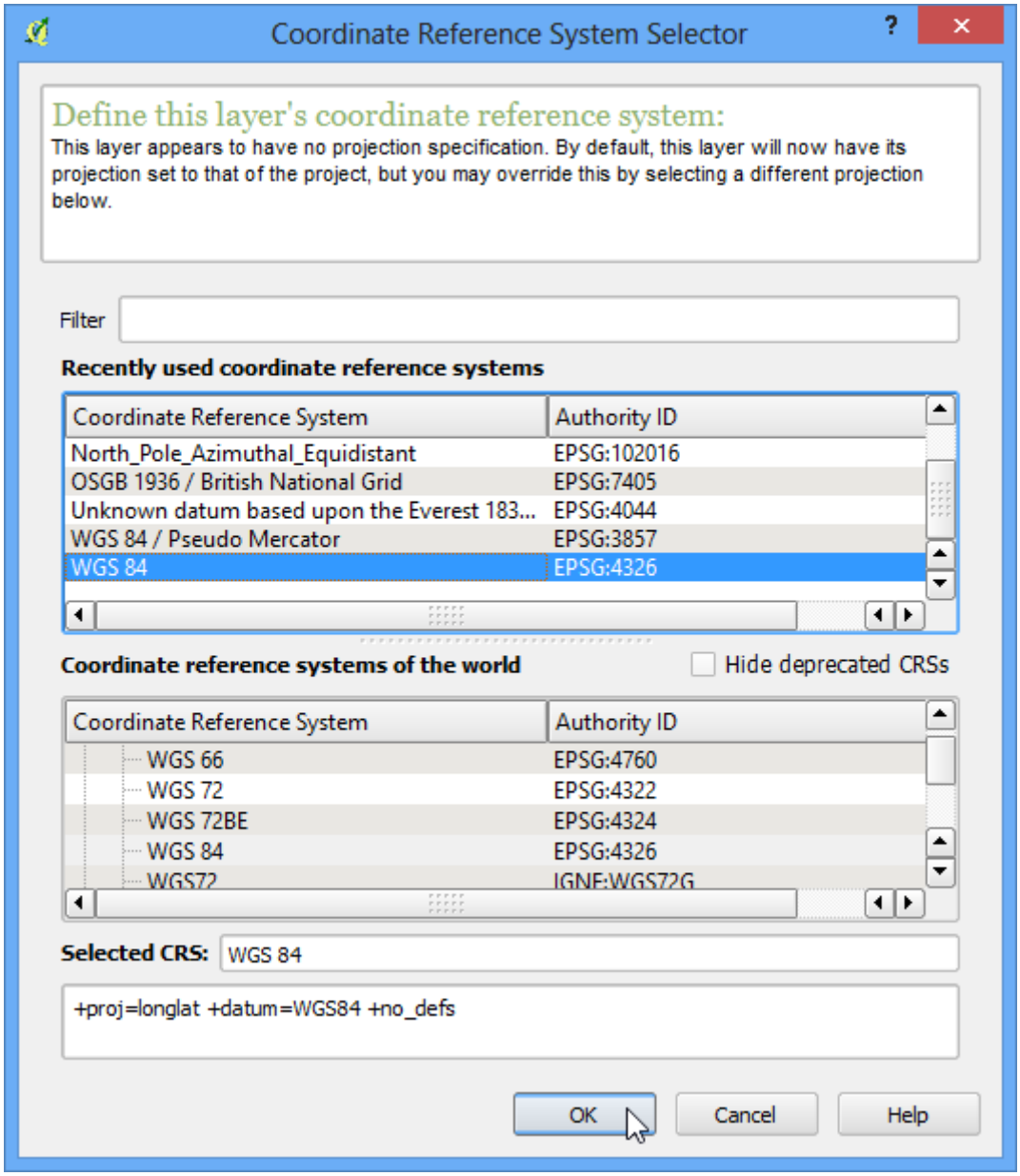
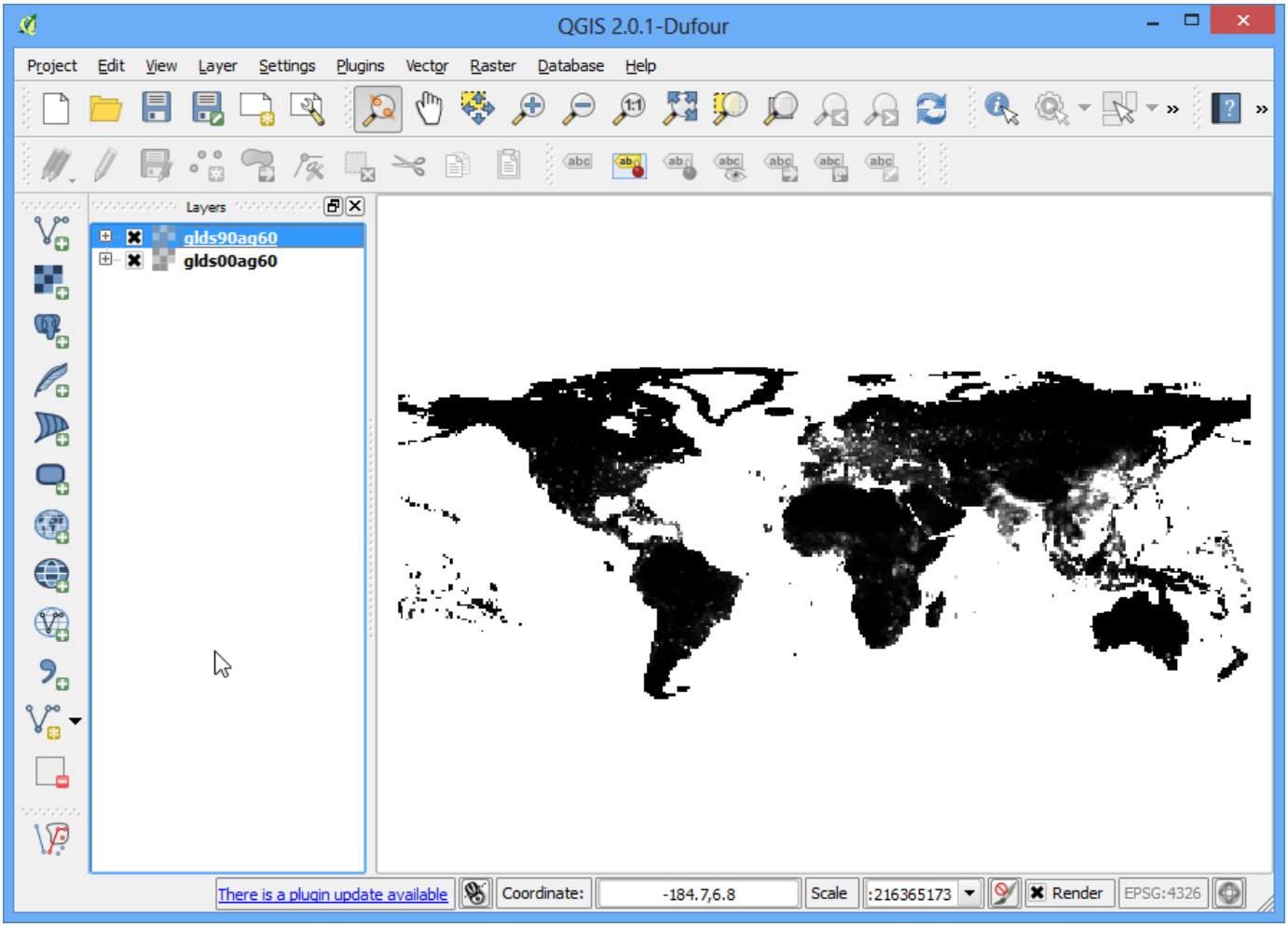


7. □□ □□ CRS□ `EPSG:4326`□ □□□□□.


Coordinate Reference System Selector
Define this layer's coordinate reference system:
This layer appears to have no projection specification. By default, this layer will now have its projection set to that of the project, but you may override this by selecting a different projection below.
Filter
Recently used coordinate reference systems
Coordinate Reference System
Authority ID
North_Pole_Azimuthal_Equidistant
EPSG:102016
OSGB 1936 / British National Grid
EPSG:7405
Unknown datum based upon the Everest 183...
EPSG:4044
WGS 84 / Pseudo Mercator
EPSG:3857
WGS 84
EPSG:4326
Coordinate reference systems of the world
Hide deprecated CRSs
Coordinate Reference System
Authority ID
WGS 66
EPSG:4760
WGS 72
EPSG:4322
WGS 72BE
EPSG:4324
WGS 84
EPSG:4326
WGS72
IGNF:WGS72G
Selected CRS:
WGS 84
+proj=longlat +datum=WGS84 +no_defs
OK
Cancel
Help

8. □□ QGIS□ □□□□□ □□□ □□□□□□ □□□□□. □□□□ □□□□□□ □□□□ □□□□. □□□ □□ □□□ □□□ □□ □□, □□ □□ □□□ □□ □□ □□ □□□□□.



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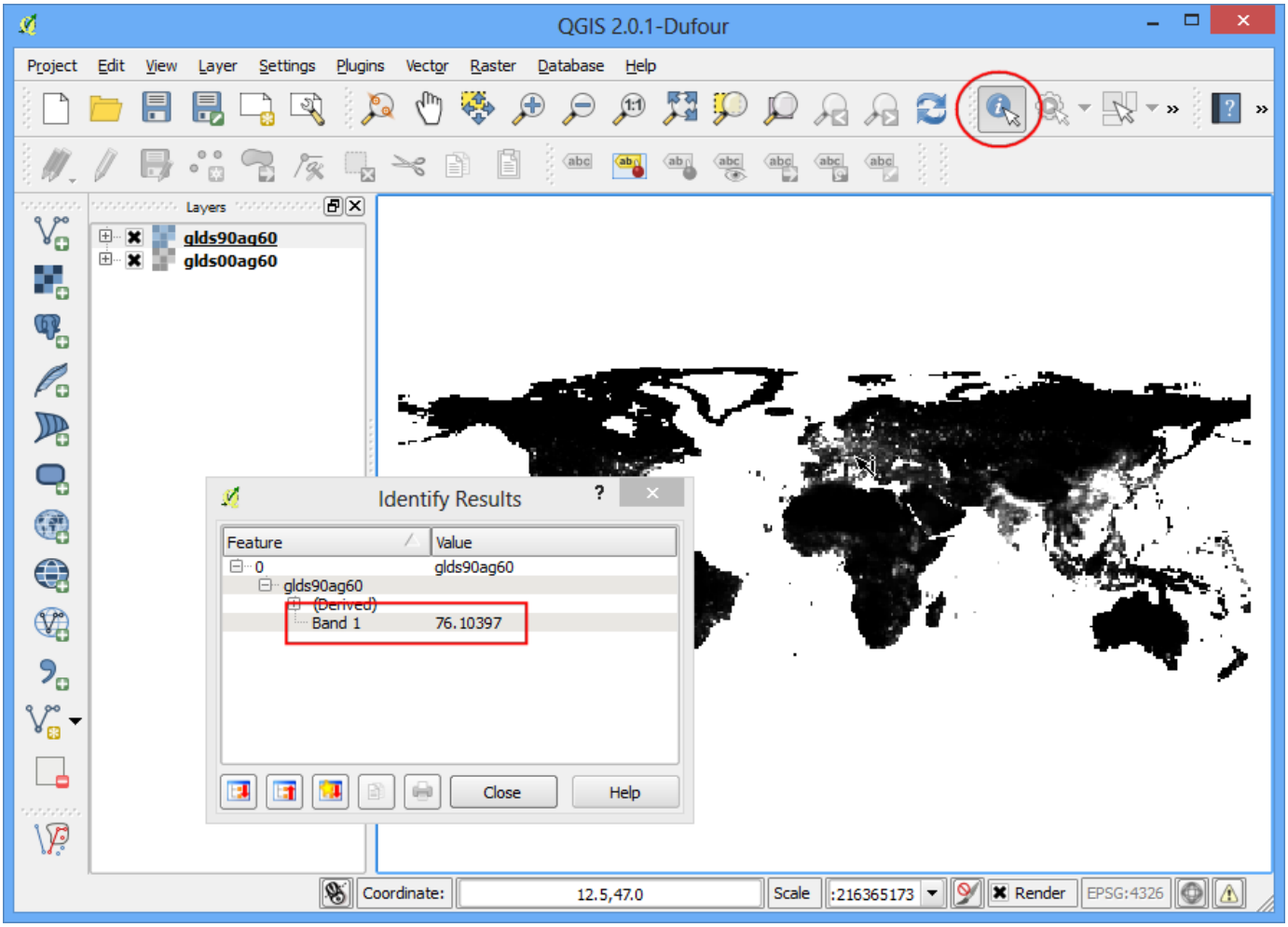

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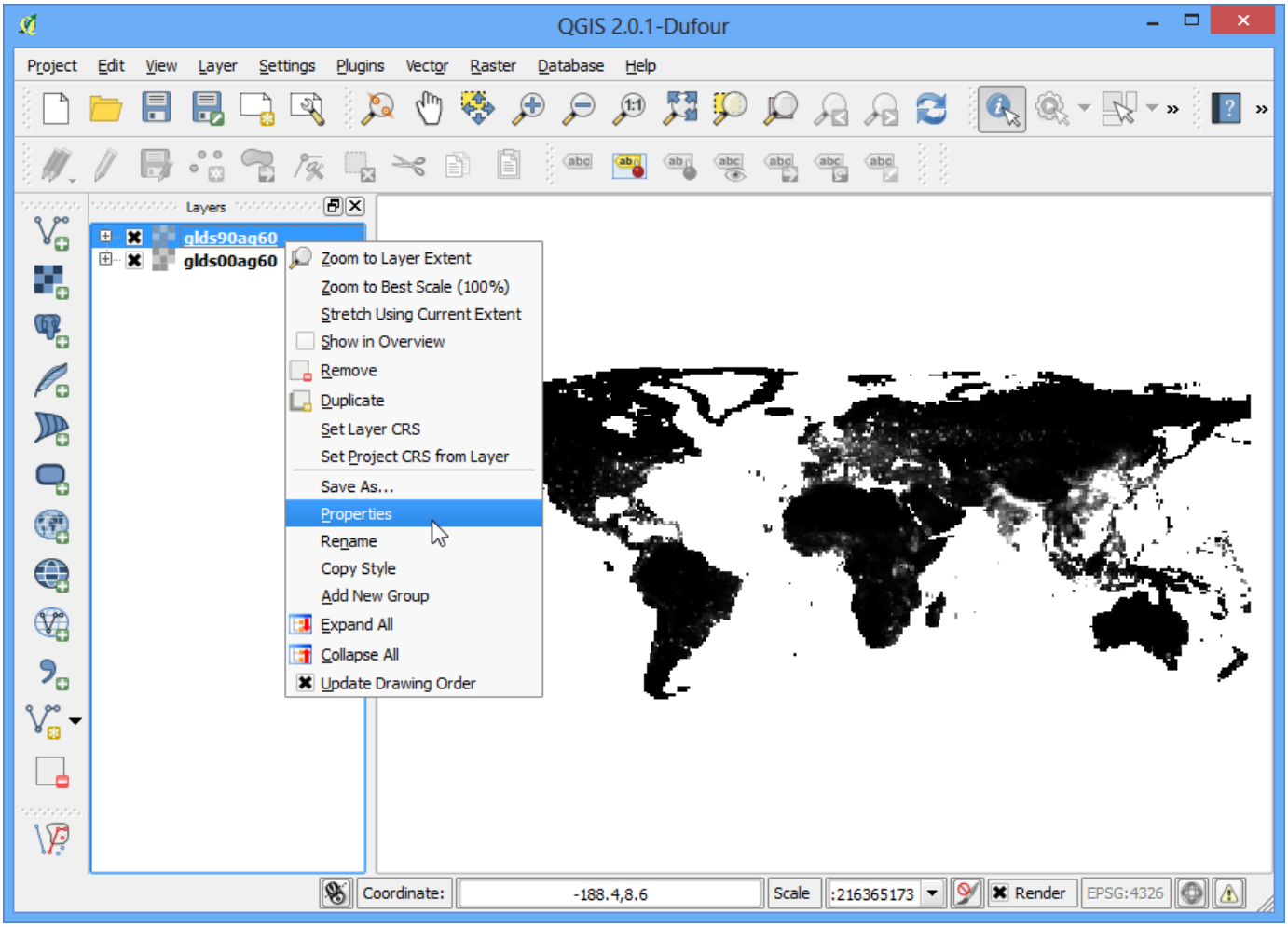
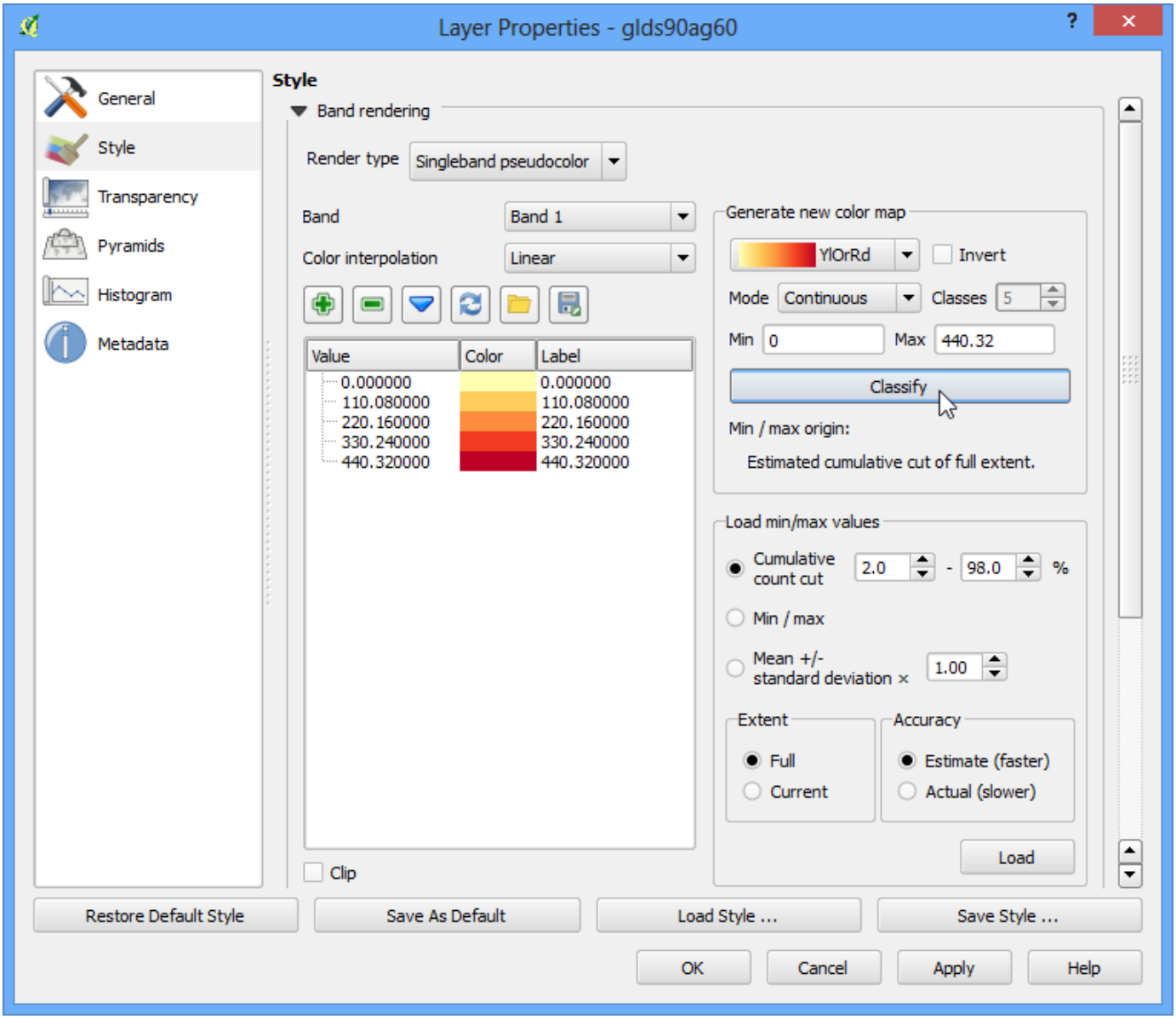
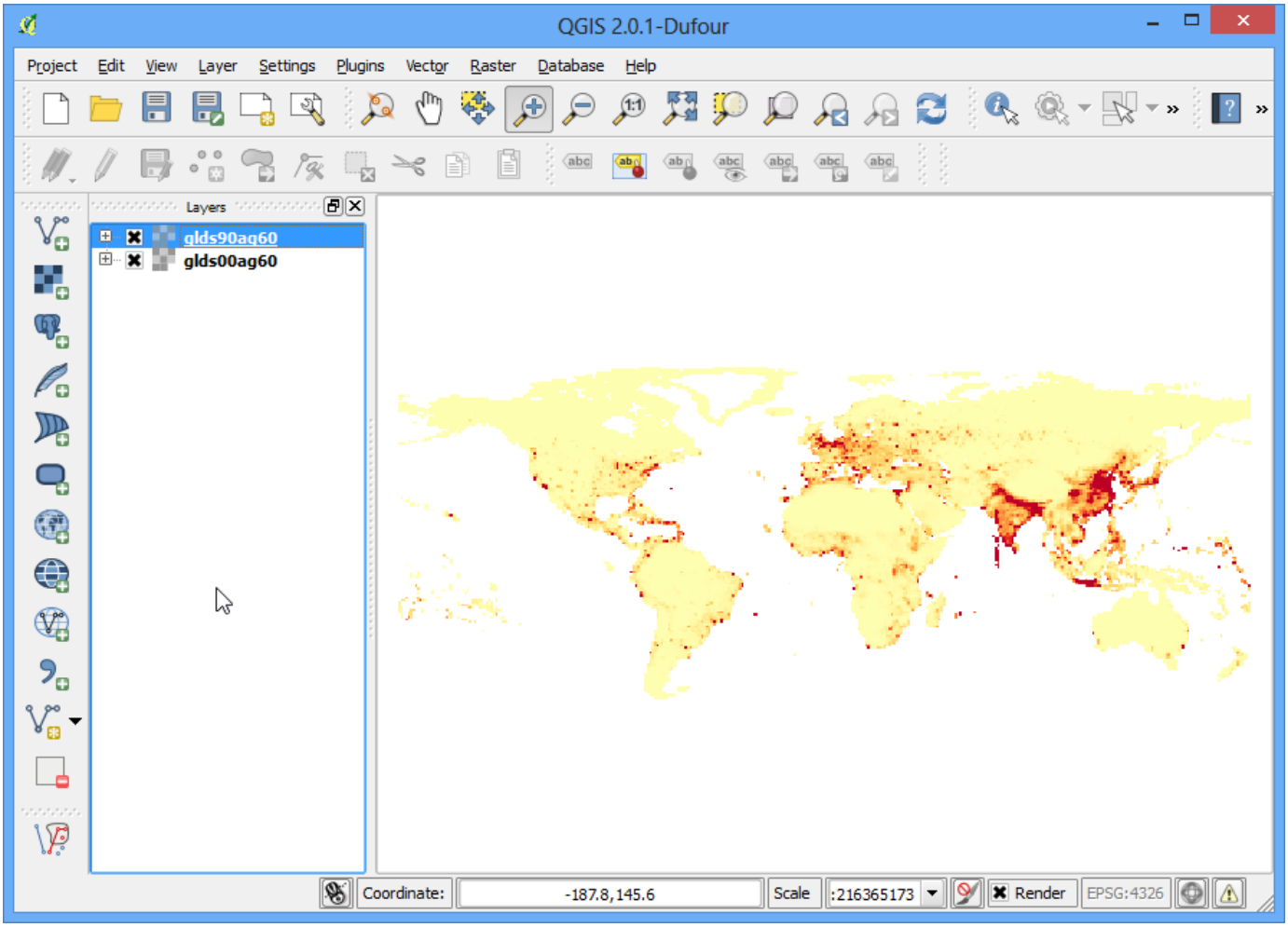


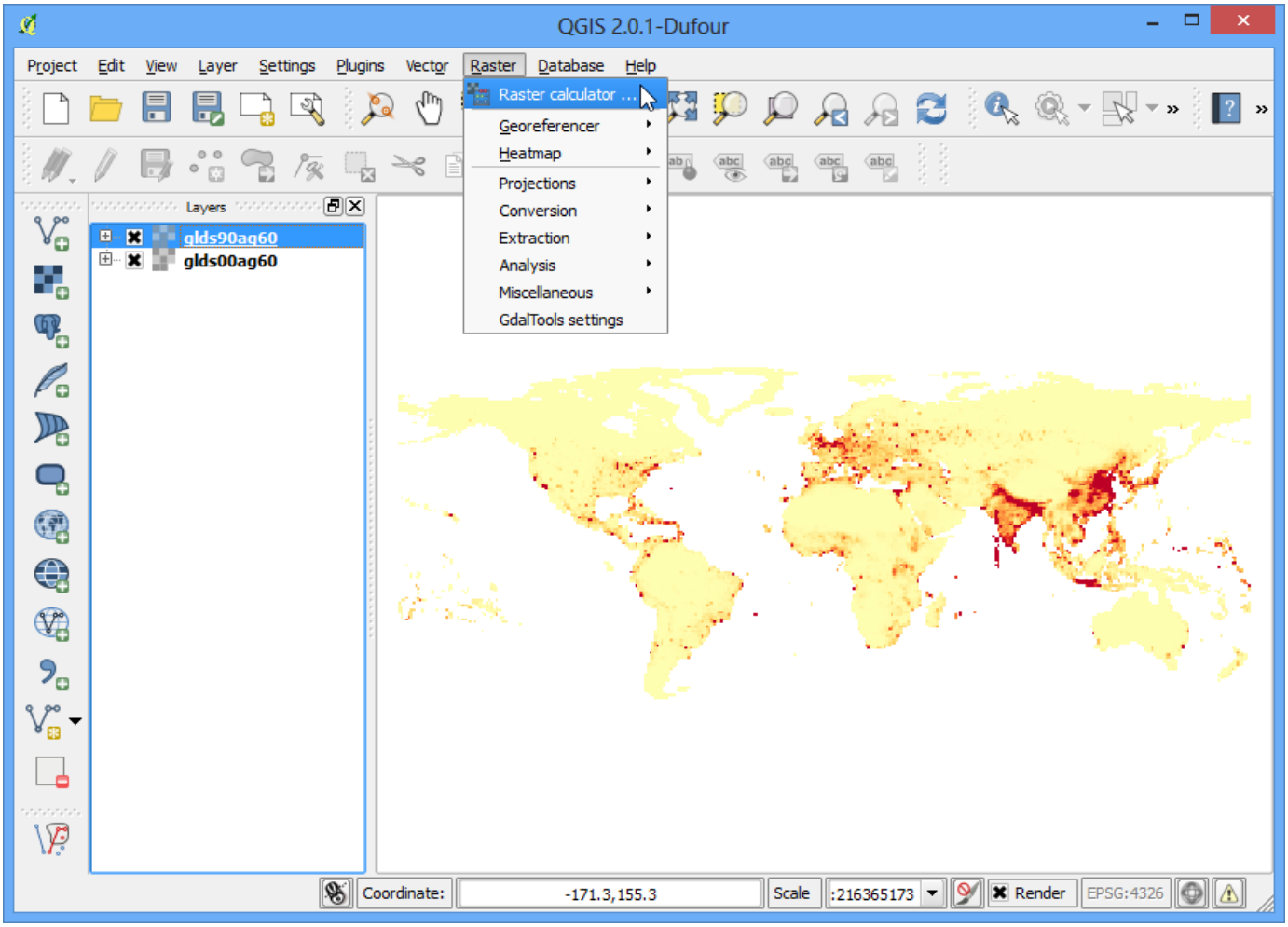
11. □□□ Style □□□ □□ □□ Render type □ □□□□ □□□□ Singleband pseudocolor`□ □□□□□□. □□ □ □□□ □□ :guilabel:`Generate a new color map`□□ □□ :guilabel:`Classify □ □□□□□. 5□□ □□□ □□□ □□□□ □□ □ □ □□□□. :guilabel:`OK`□ □□□□□.


Layer Properties - glds90ag60
General
Style
Transparency
Pyramids
Histogram
Metadata
Style
Band rendering
Render type
Singleband pseudocolor
Band
Band 1
Color interpolation
Linear
Value
Color
Label
0.000000
110.080000
220.160000
330.240000
440.320000
Clip
Generate new color map
YlOrRd
Invert
Mode
Continuous
Classes
5
Min
0
Max
440.32
Classify
Min / max origin:
Estimated cumulative cut of full extent.
Load min/max values
Cumulative count cut
2.0
98.0
%
Min / max
Mean +/- standard deviation ×
1.00
Extent
Full
Current
Accuracy
Estimate (faster)
Actual (slower)
Load
Restore Default Style
Save As Default
Load Style ...
Save Style ...
OK
Cancel
Apply
Help

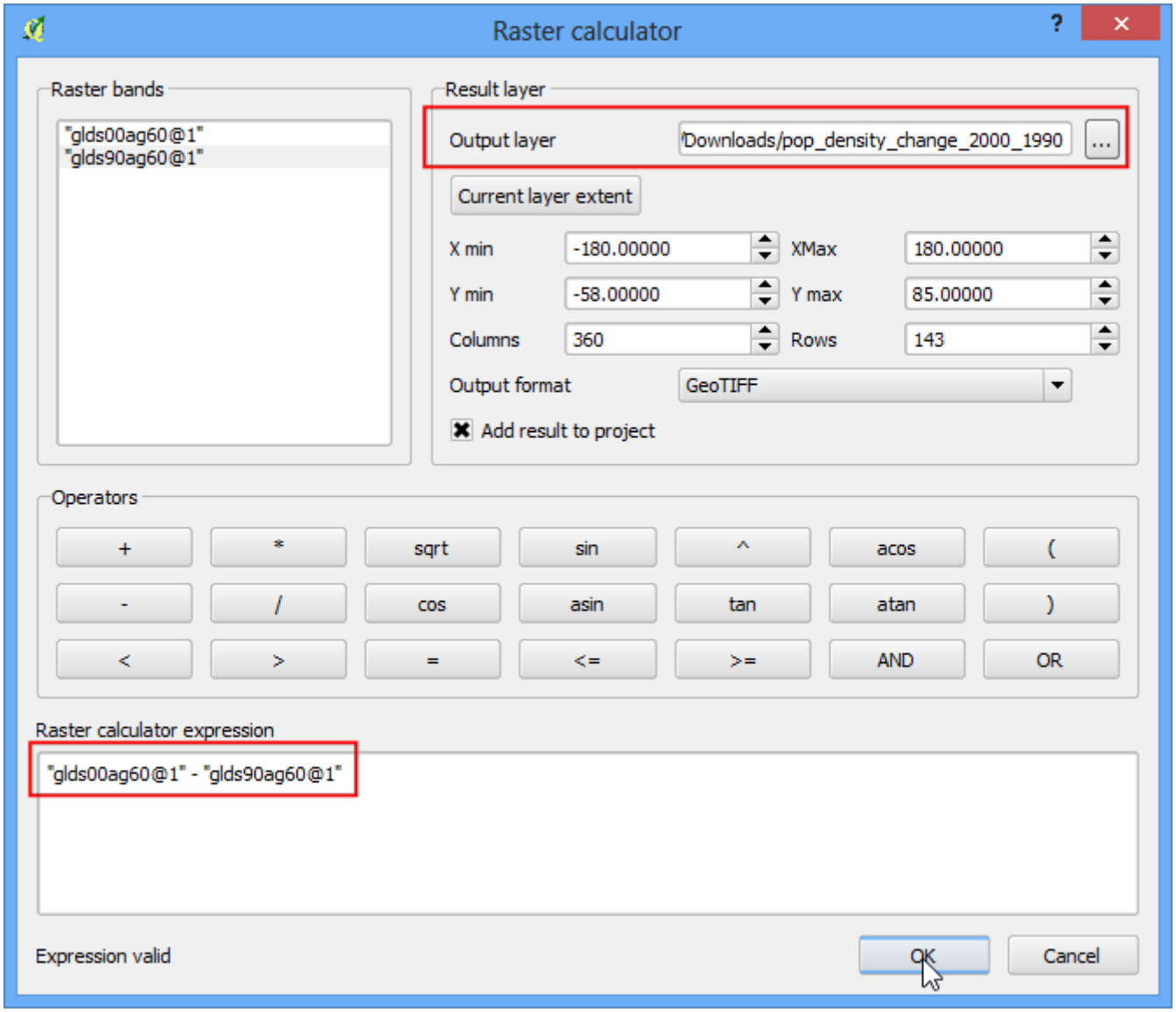
12. QGIS □□□□ □□□ □□□. □□□□ □□□ □□ □□□ □□ □ □ □□□□. □□ □□□ □□ □□□□ □□ □□□□□.



13. □□□□□ 1990□□ 2000□ □□□ □□ □□□□□ □ □□ □□ □□□□. □□□ □□□□ □□ □□□ □□□ □□□□□ □ □□□ □□□ □□ □□□ □□ □□□□. □□> □□□ --> □□□ □□□ :menuselection:`Raster --> Raster calculator`□ □□□□□.



14. □□□ □□ Raster bands □□ □□□□ □□□□□□□□ □□□□ □□□ □ □□□□. □□□ □□□ □□ □□ @□ □□□□ □□□□. □□□ □□□□ □□ □□□ □□□ □□□□□□ □□□□□ 1□ □□ □□ □ □ □□□□. □□□ □□□□ □□□ □□□ □□ □□□□ □□□ □ □ □□□□. □□□□ 2000□□ □□□□□□ 1990□□ □□□□□ □□ □□□ □□ □□□□□. □ ***glds00ag60@1 - glds90ag60@1*** □ □□□□□. □□ □□□□ :guilabel:`pop_density_change_2000_1990.tif`□ □□□□ □□□ □□□□□ □□ :guilabel:`Add result to project`□□□ □□□□□. :guilabel:`OK`□ □□□□□.


Raster calculator
Raster bands
"glds00ag60@1"
"glds90ag60@1"
Result layer
Output layer
Downloads/pop_density_change_2000_1990
...
Current layer extent
X min
-180.00000
XMax
180.00000
Y min
-58.00000
Y max
85.00000
Columns
360
Rows
143
Output format
GeoTIFF
Add result to project
Operators
+
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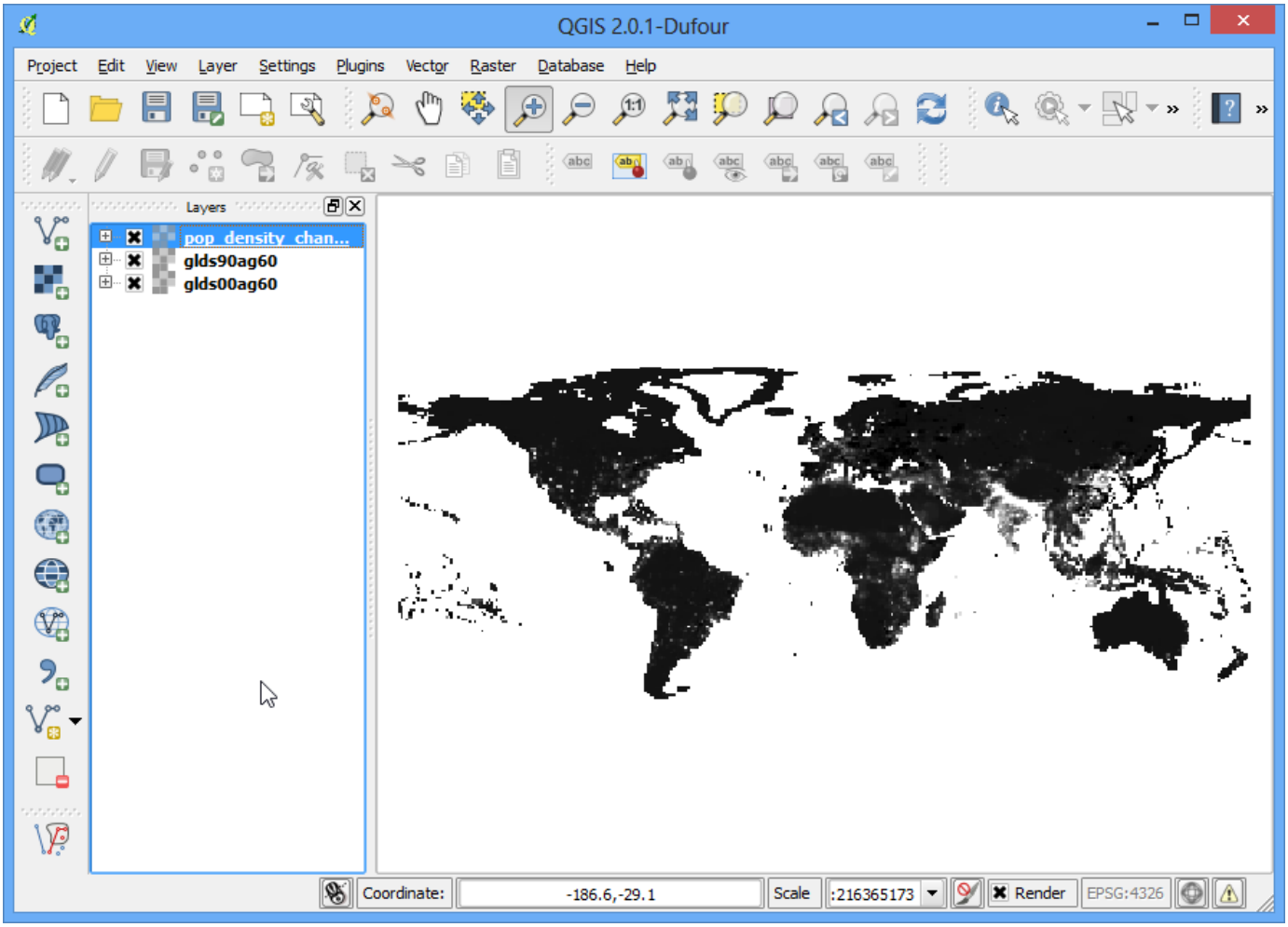
AND
OR
Raster calculator expression
"glds00ag60@1" - "glds90ag60@1"
Expression valid
OK
Cancel

15. □ □□□ □□□□ QGIS□□ □□□ □□□□ □□□ □□ □ □ □□□□.



16. □□□ □□□□□ □□□□□□ □□ □□□□□. □□□ □□ □□□□□□ □□ □□□□ □□□ □ □ □□□□.
``pop_density_change_2000_1990``□□□□ □□ □□□ □□□ □□□ □□ □□
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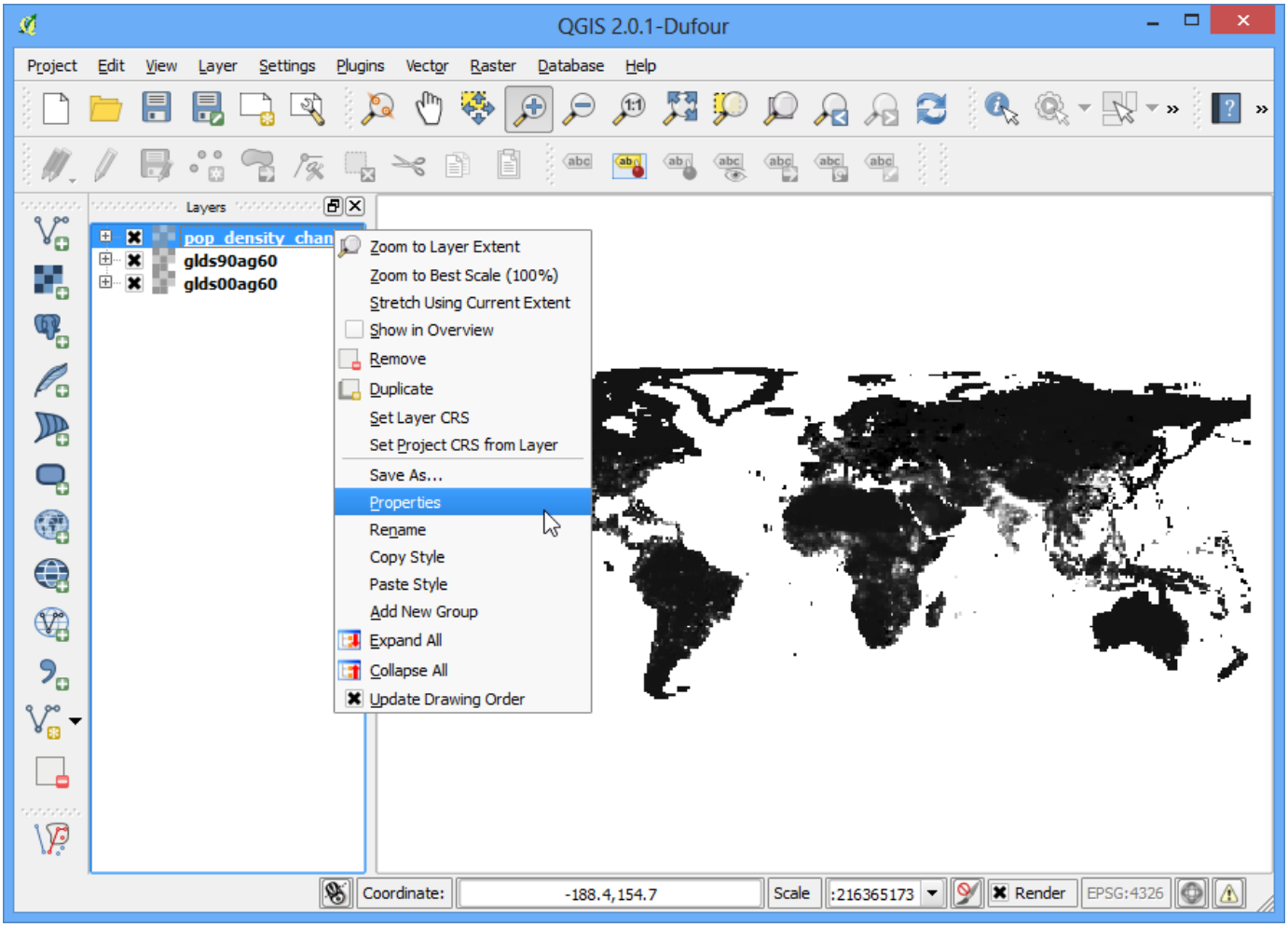
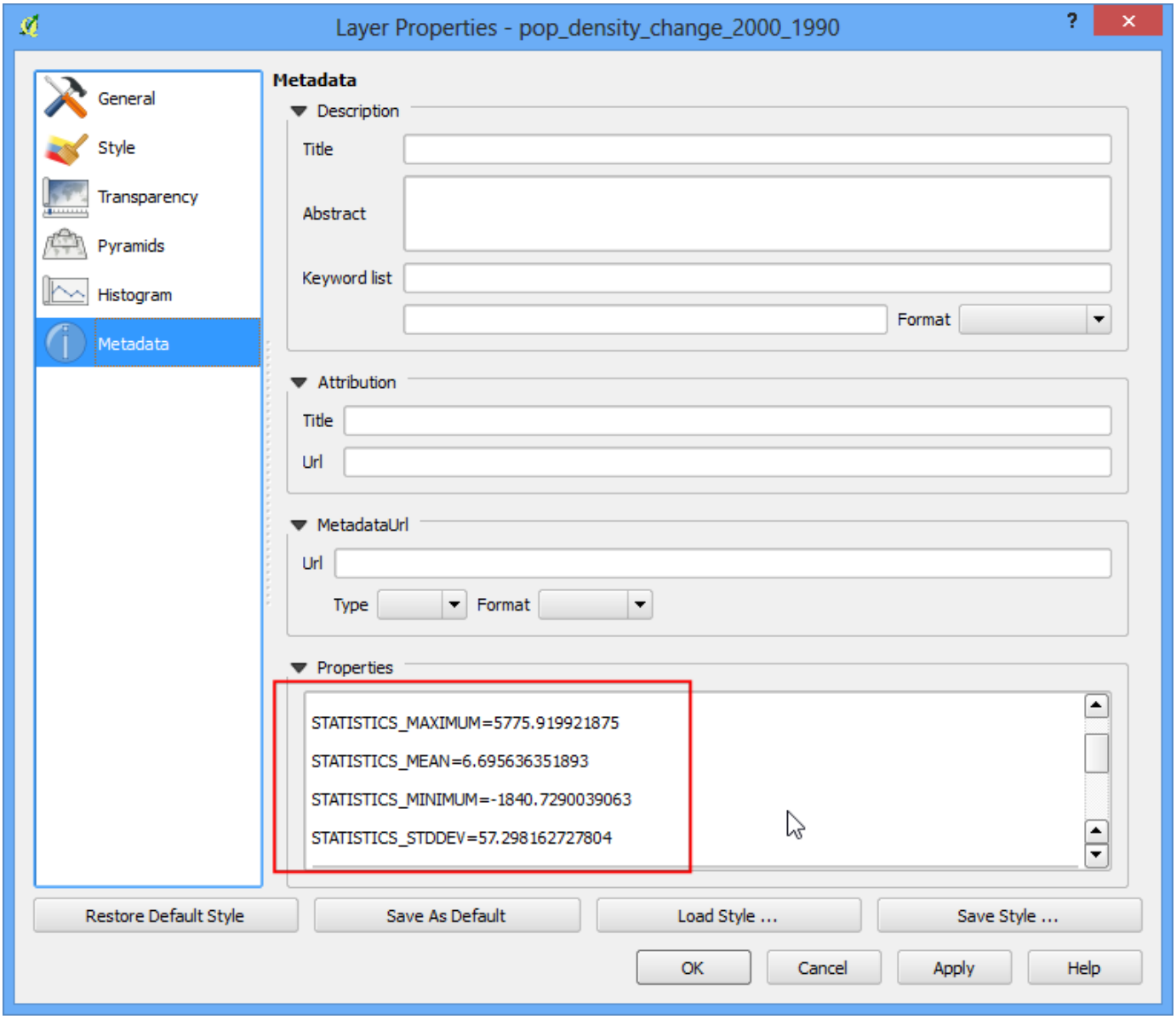
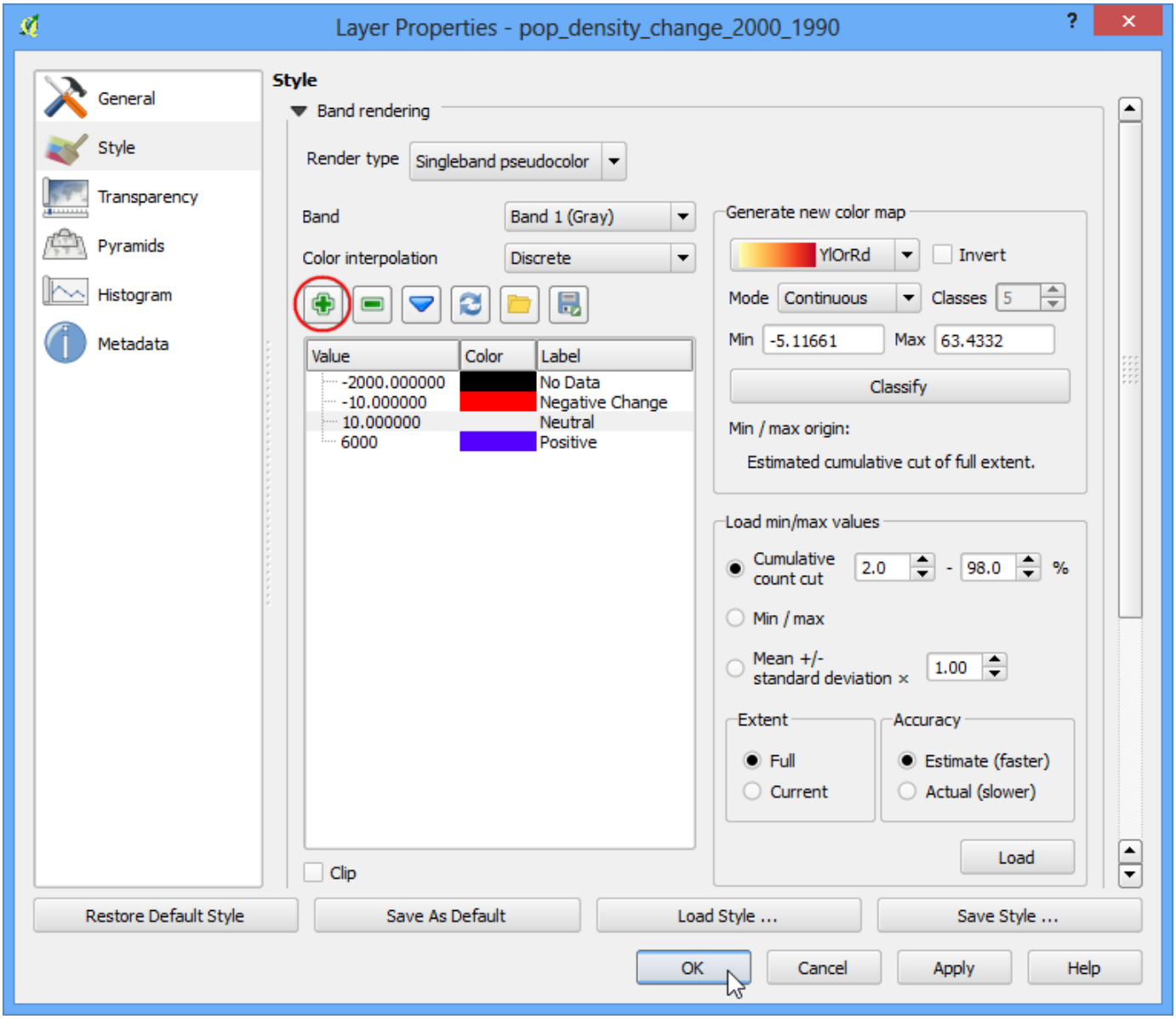


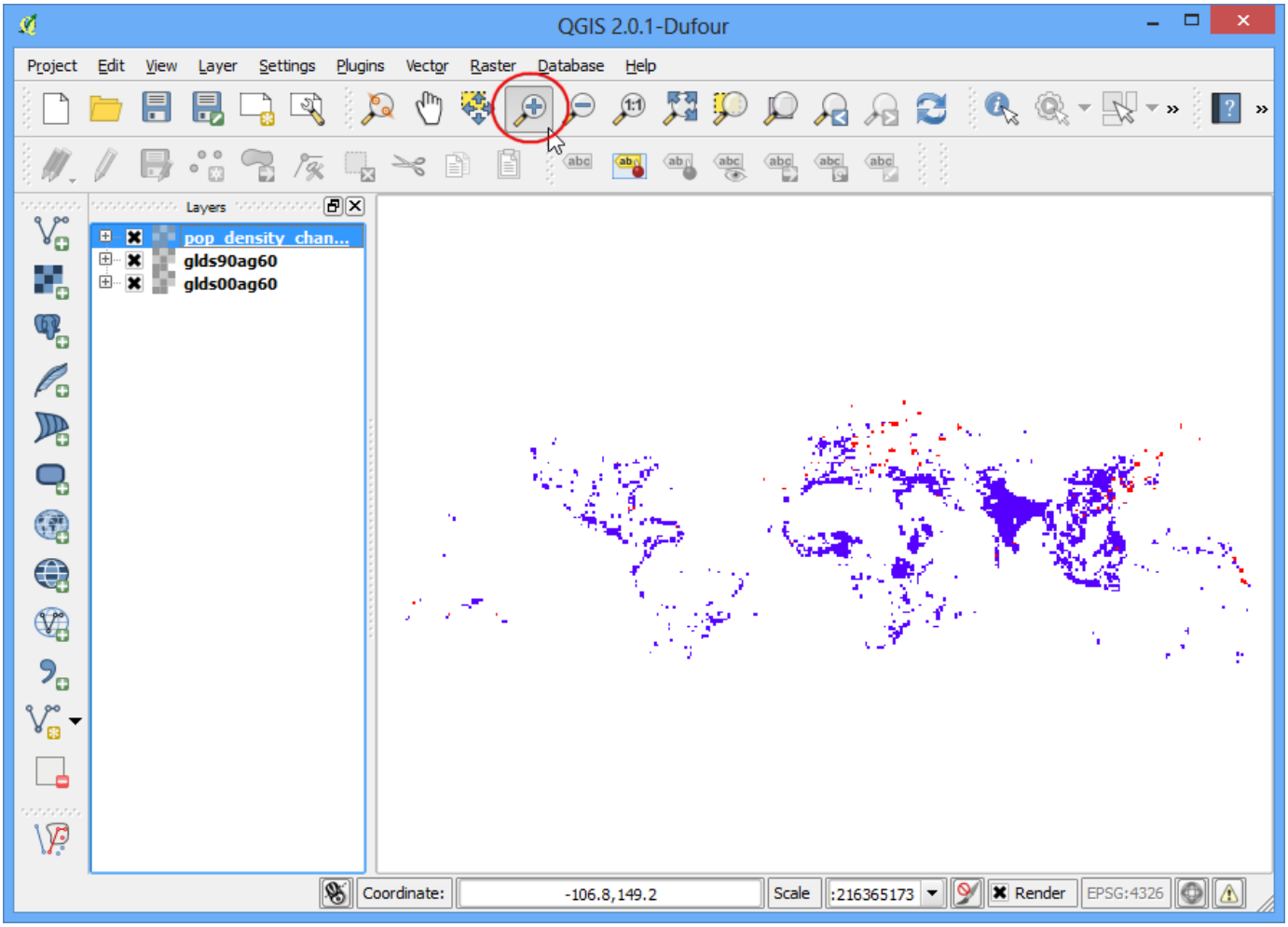
17. □□□□ □□□□□□ □□□ □□ □□□ □□□ □□□□ □□□□ □□ □□ □□□ □□ □□□. □ □□□ □□ □□ □□□□□ :guilabel:`Metadata`□□□ □□□. □□□ □□□□ □□□ □□□□□. □ □□□□ □□ □ □□□□ □□□□□.



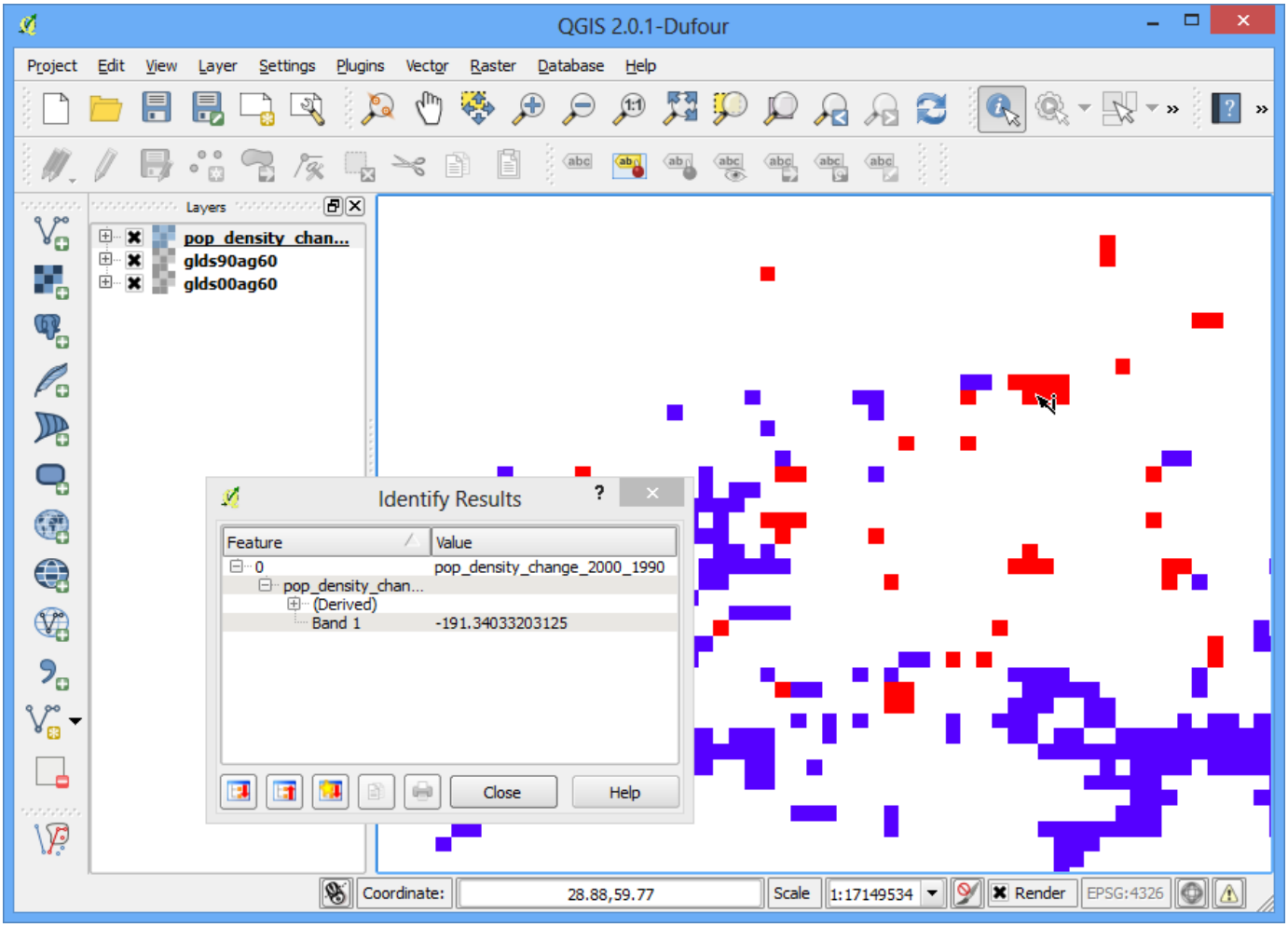
18. □□ □□□ Style □□□ □□□. □□ □□□ :guilabel:`Band Rendering`□□ □□ □□ :guilabel:`Render type`□□ □□□□ □□□□ :guilabel:`Singleband pseudocolor`□ □□□□□. □□ □□ :guilabel:`Color interpolation`□□ □□ :guilabel:`Discrete`□ □□□□□. 4□□ □□ □□□□□ □□□ □□ □□ □□□□ □□□ :guilabel:`Add entry`□ 4□ □□□□□. □□ □□□□ □□ □ □□□□ □□□□□. □□□□□ □ □□□□ □□□□ □□□ □□ □□ □ □□□□ □□□ □□□□□. □□□□□ □□□□ -2000 □□□□□ □□□ □□□□ -2000□ □□□□□. □□□ No Data □, □□□□□ □□ □□□ □□□□□. □□ □□□□ □□□□ □□ □□□ □□□ □□ □□□□ :guilabel:`OK`□ □□□□□.



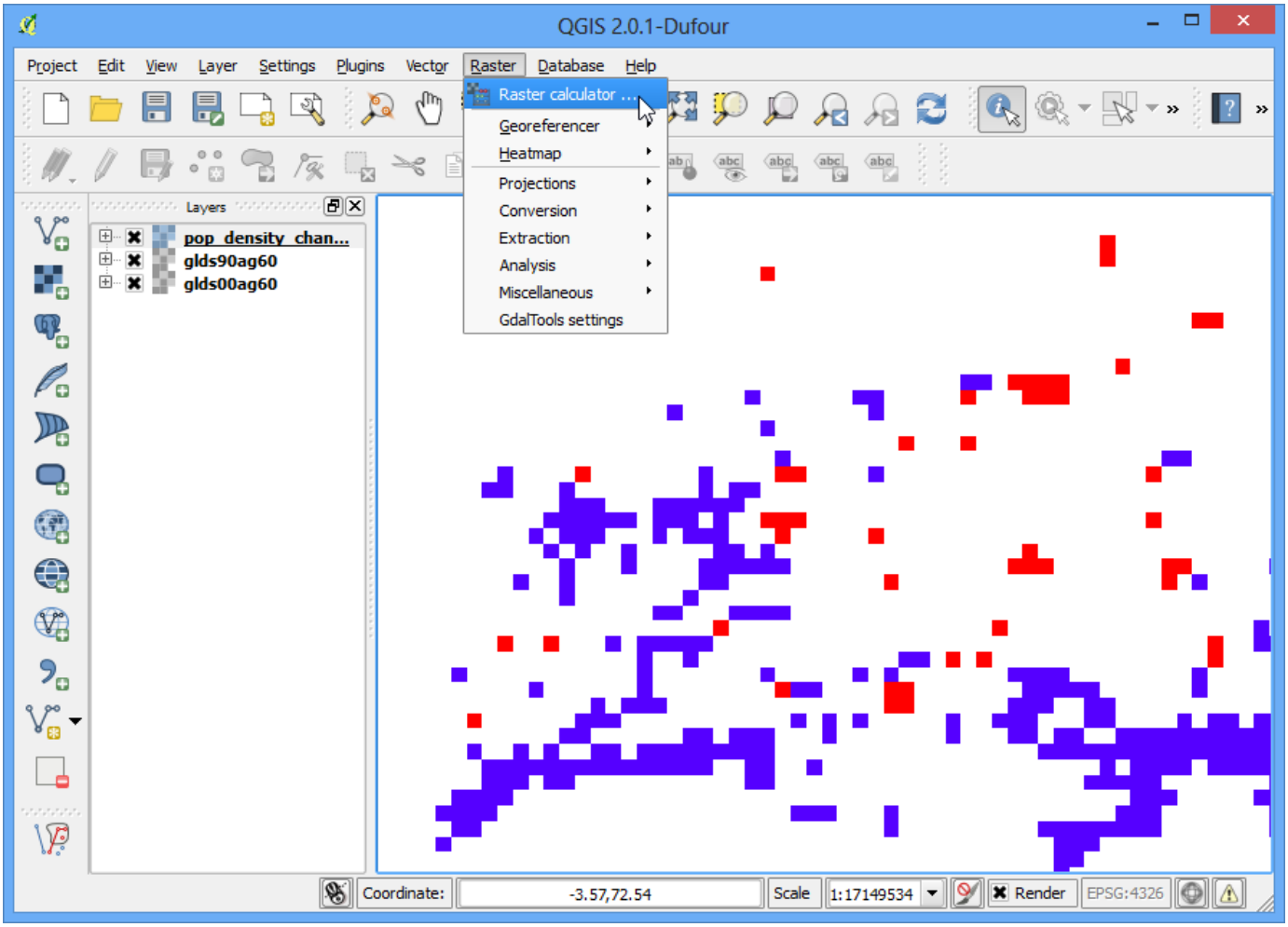
19. □□ □□□□□ □□□ □□□ □□□ □□□ □ □ □□ □□□ □□□□ □□□ □ □ □□□□. □□:guilabel:`Zoom In`□□□ □□□□ □□□□□ □□ □□□□ □□□ □□ □□□□ □□□ □□□ □ □□□□.



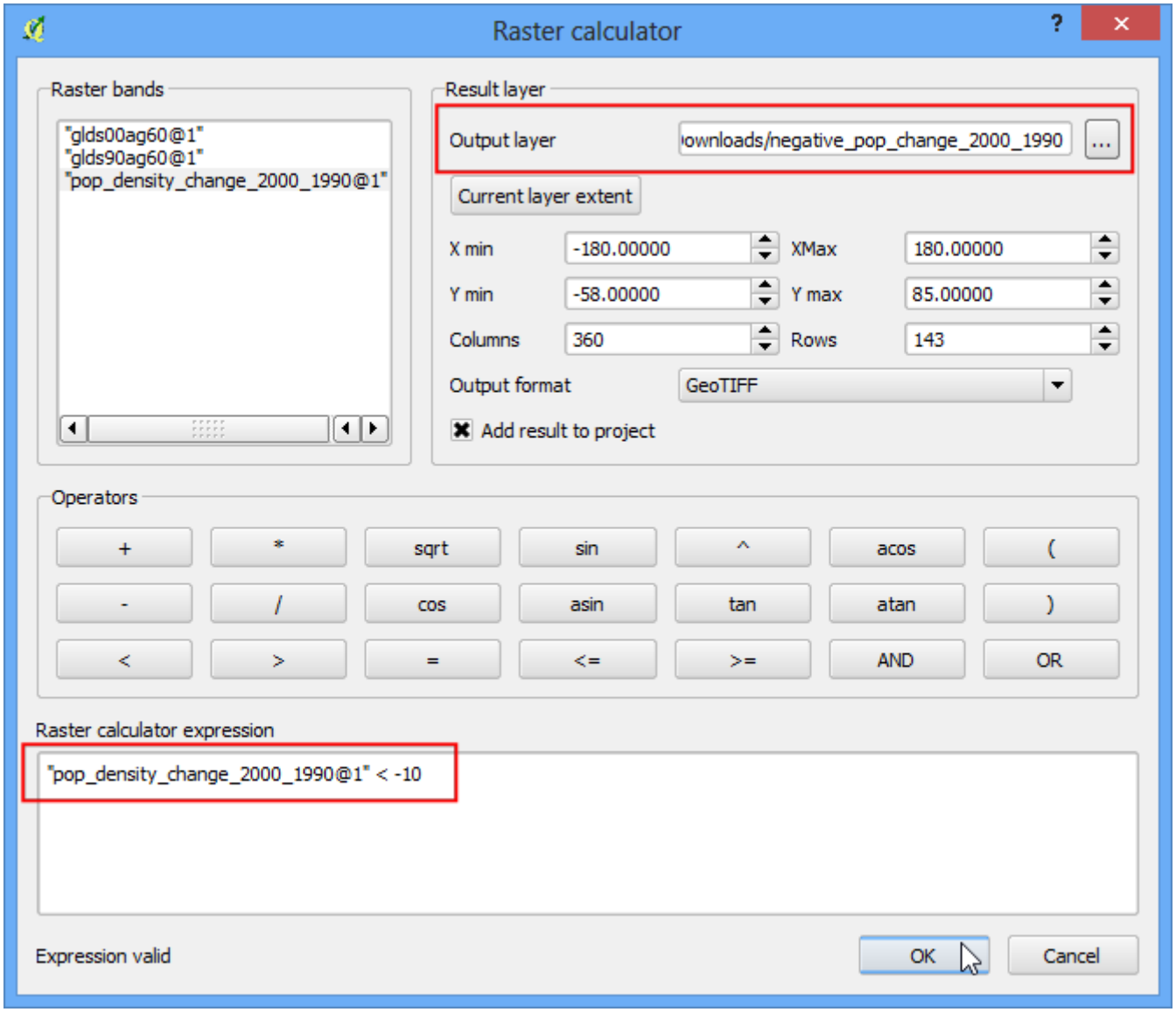
20. □□ □□ :guilabel:`Identify`□□□ □□□□, □□ □□□ □□□□□□ □□□□ □ □□□□□□ □□□□ □□ □□□ □□□ □□□ □□□ □□□□□.



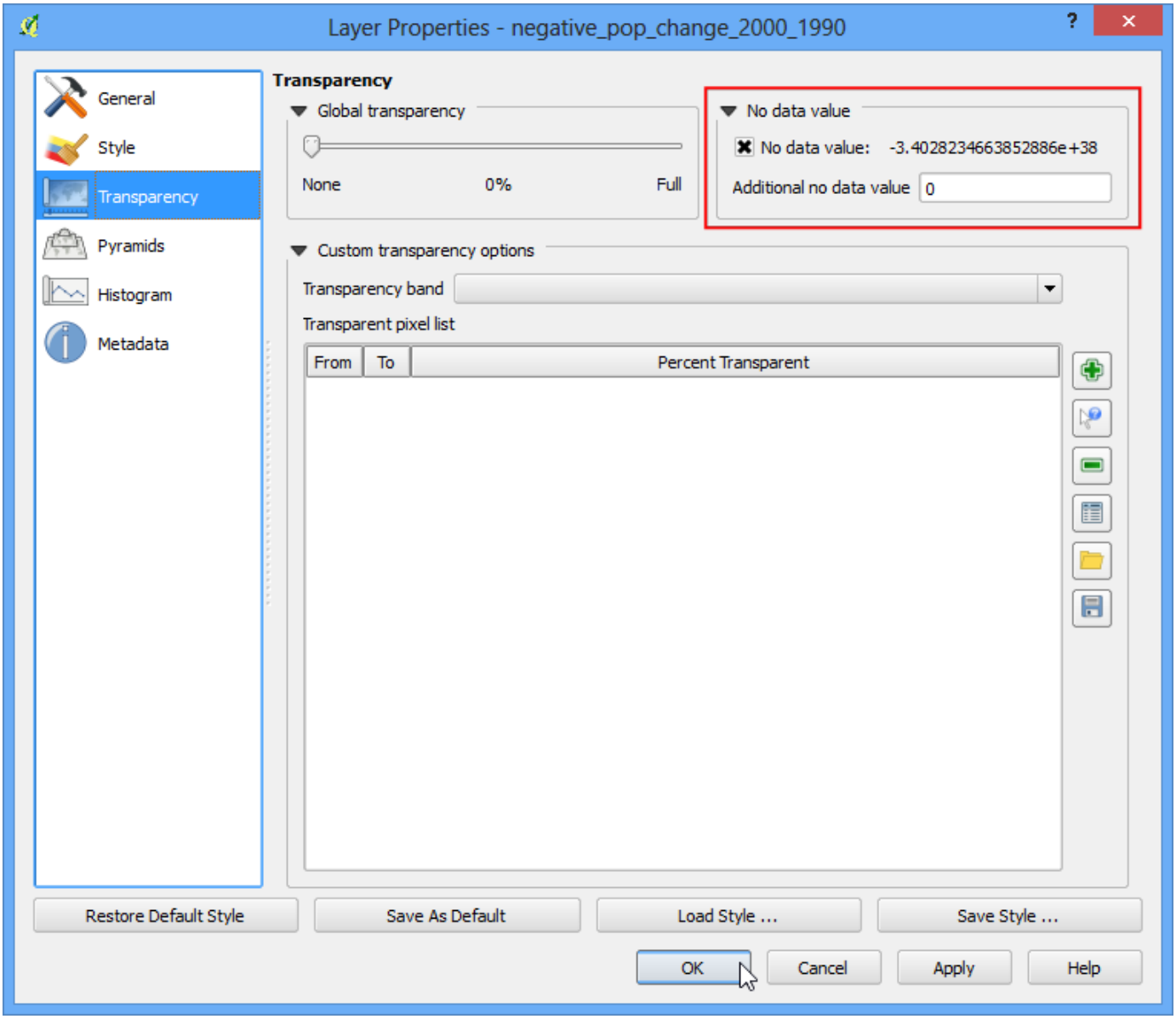
21. □□ □ □ □ □□□ □□□□□ '□□'□ □□□□ □□□□□. □□ □□□ --> □□□ □□□ :menuselection:`Raster --> Raster calculator`□ □□□.



22. □□□ □□ □□□□ ``pop_density_change_2000_1990@1 < -10``□ □□□□□. □ □□ □□□□ □□□□ 1 □□□ □□□ 0□ □□□□□. □□□ □□□□□ □□□ □□□ □□□□ 1□ □□ □□□ □□ □□□ □□□□ 0□□□ □□□□ □□□□□. □□ □□□□ □□□ ``negative_pop_change_2000_1990``□□ □□□□, □□□ □□□□□ □□ :guilabel:`Add result to project`□□□ □□□□□. OK□ □□□□□.



23. □□ □□□ □□□□ □□□□□□□. □□□ □□□ □□□ □ □□ □□ :guilabel:`Properties`□ □□□□□. □□□ :guilabel:`Transparency`□□□ □□□□ no data value :guilabel:`Additional no data value`□ 0□ □□□□□. □□□ □□□ 0□ □□ □□ □□ □□ □□□□ □□□□. :guilabel:`OK`□ □□□□□.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Transparency
Pyramids
Histogram
Metadata
Transparency
Global transparency
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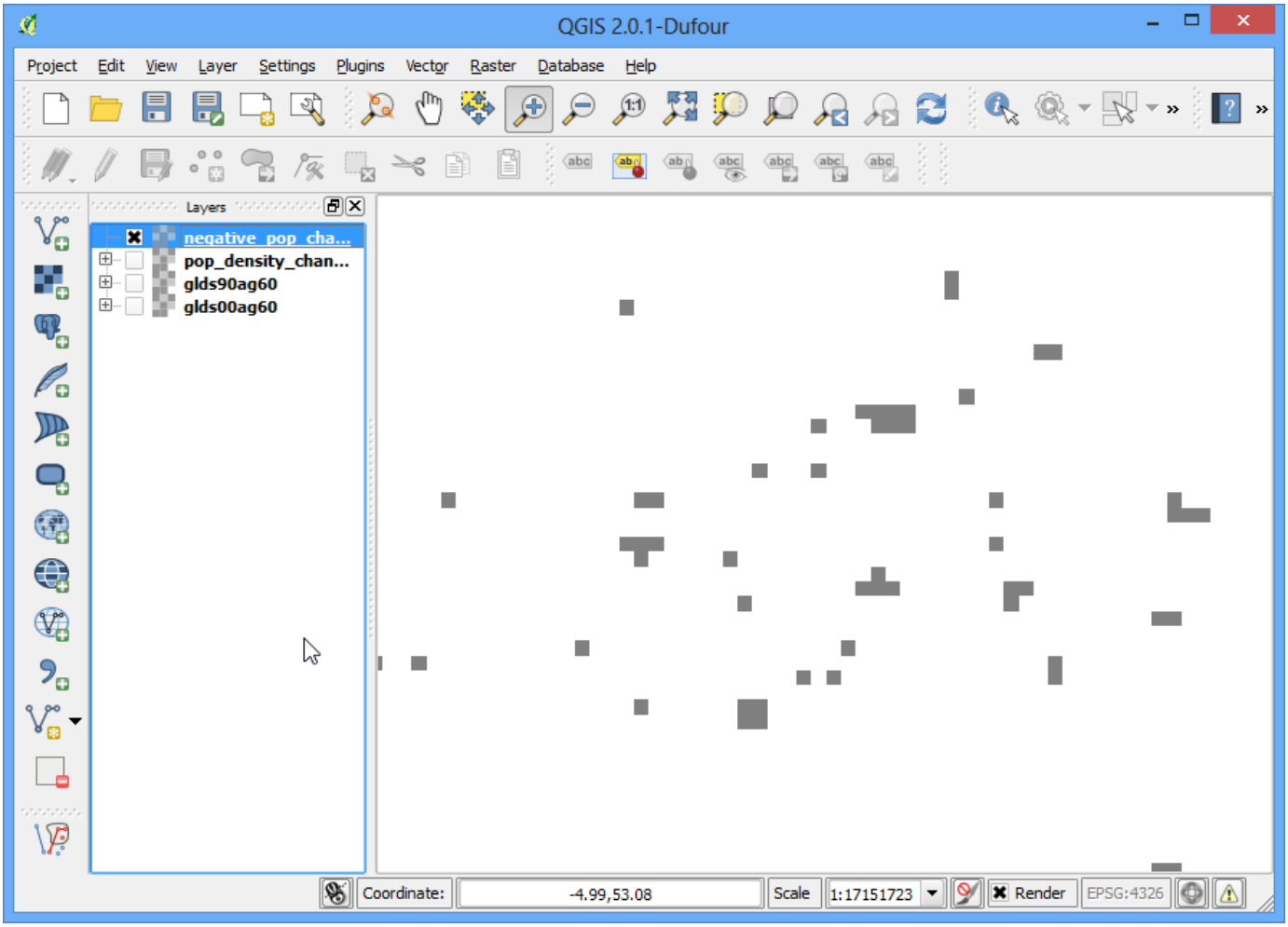
0%
Full
No data value
No data value:
-3.4028234663852886e+38
Additional no data value
0
Custom transparency options
Transparency band
Transparent pixel list
From
To
Percent Transparent
Restore Default Style
Save As Default
Load Style ...
Save Style ...
OK
Cancel
Apply
Help

24. □□ □□□□□ □□□ □□□ □□ □□□ □ □ □□□□.


QGIS 2.0.1-Dufour
Project
Edit
View
Layer
Settings
Plugins
Vector
Raster
Database
Help
Layers
negative_pop_cha...
pop_density_chan...
glds90ag60
glds00ag60
Coordinate:
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Scale
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Render
EPSG:4326