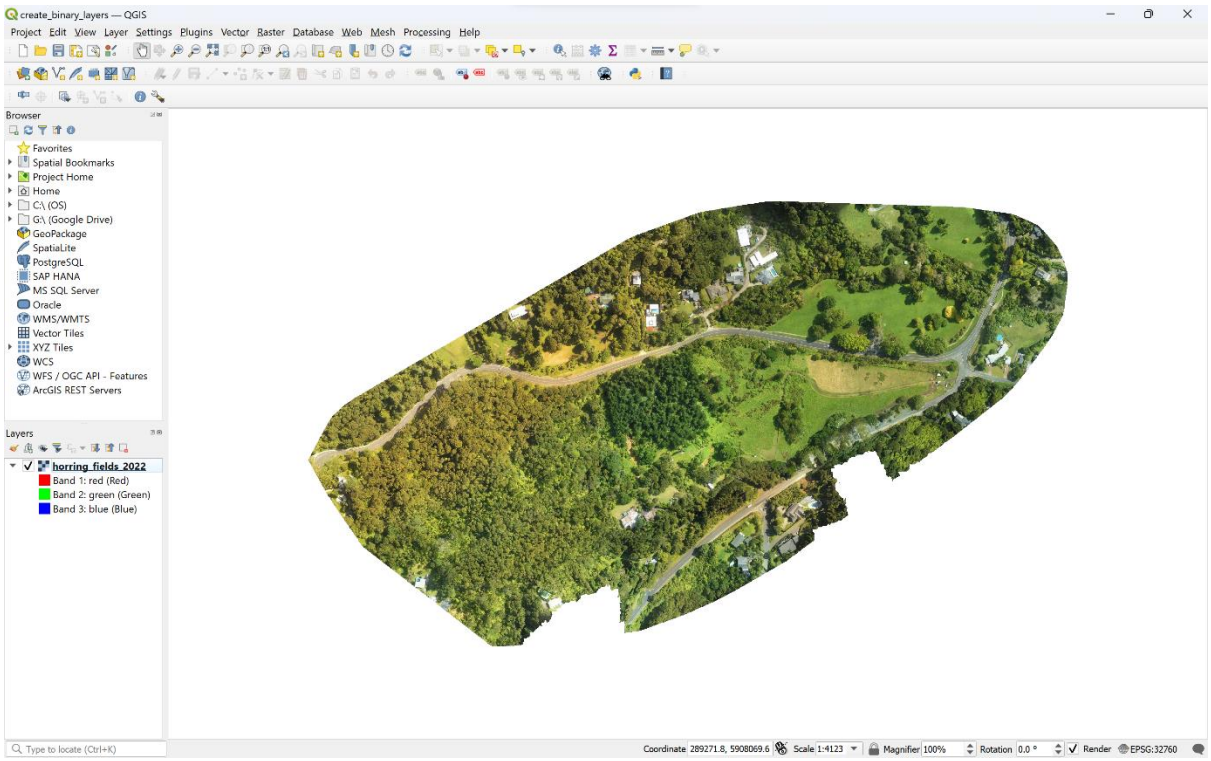
Create binary layers from data layer.

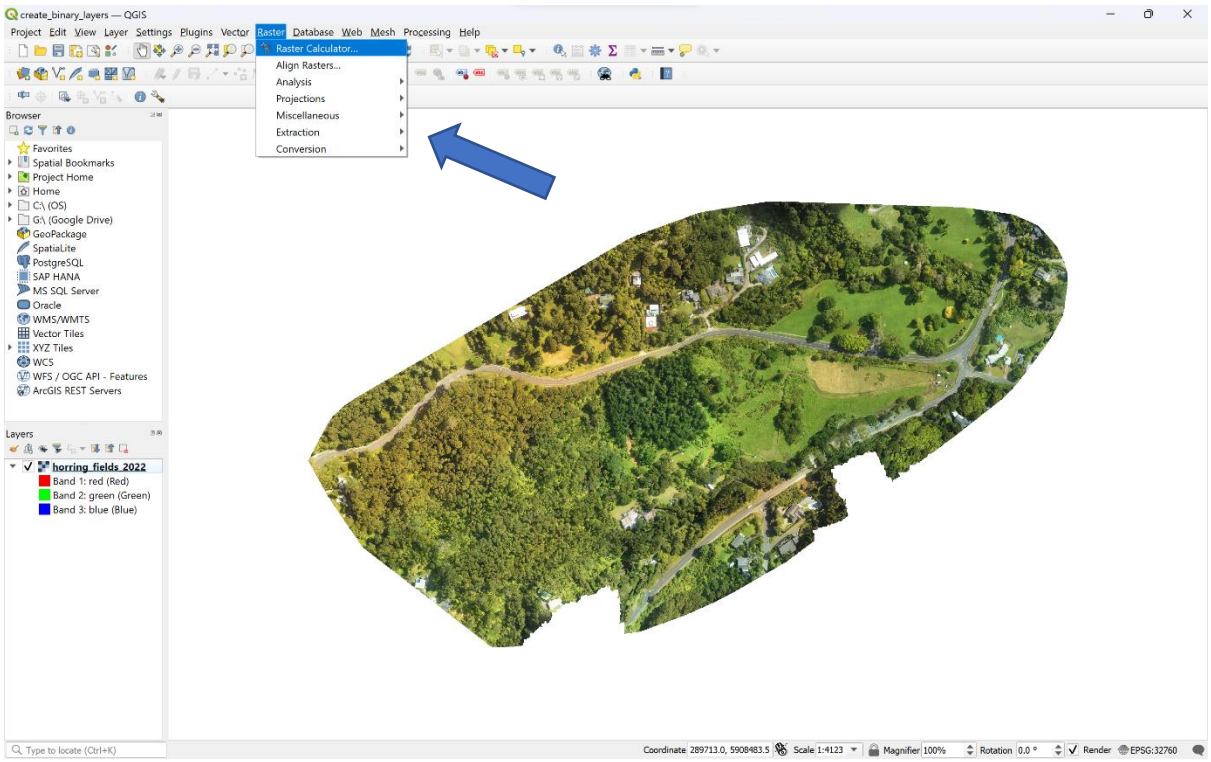
This example has the objective of creating a binary layer from data layers in QGIS.

There are step-by-step screenshots showing the stages that have been performed.

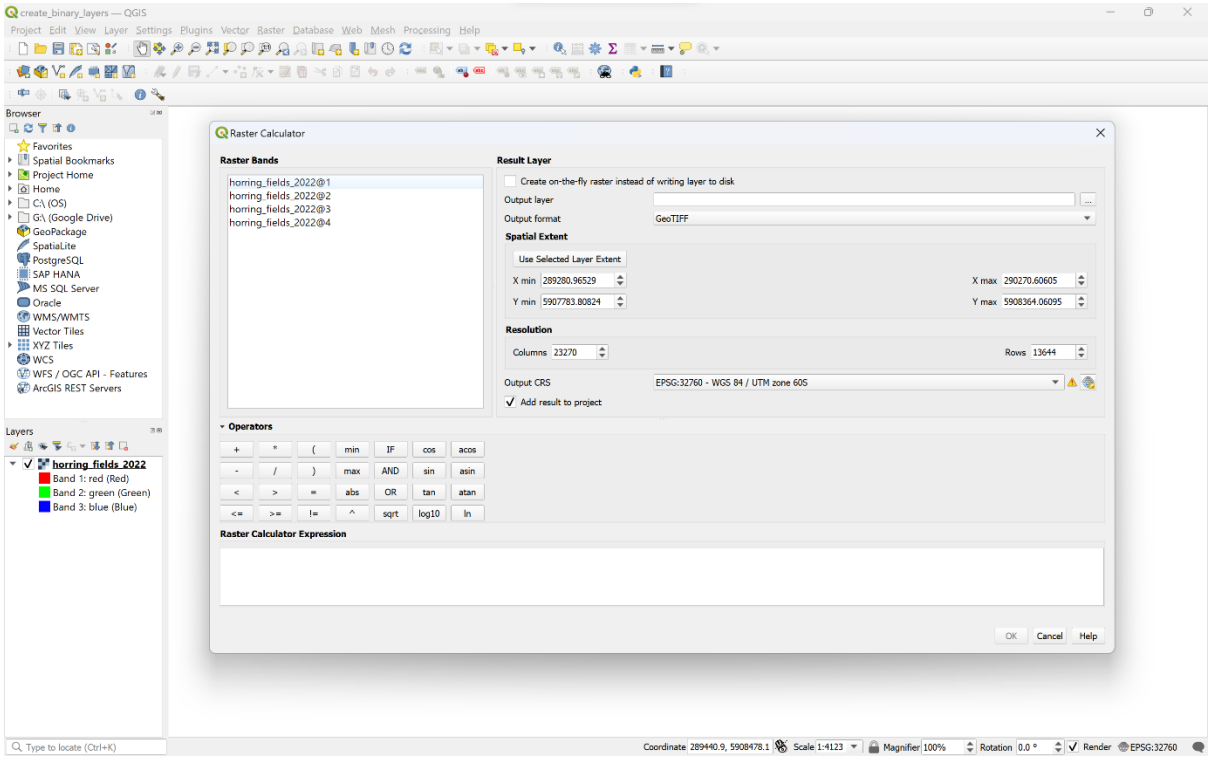
1- load raster file in QGIS (drag and drop)



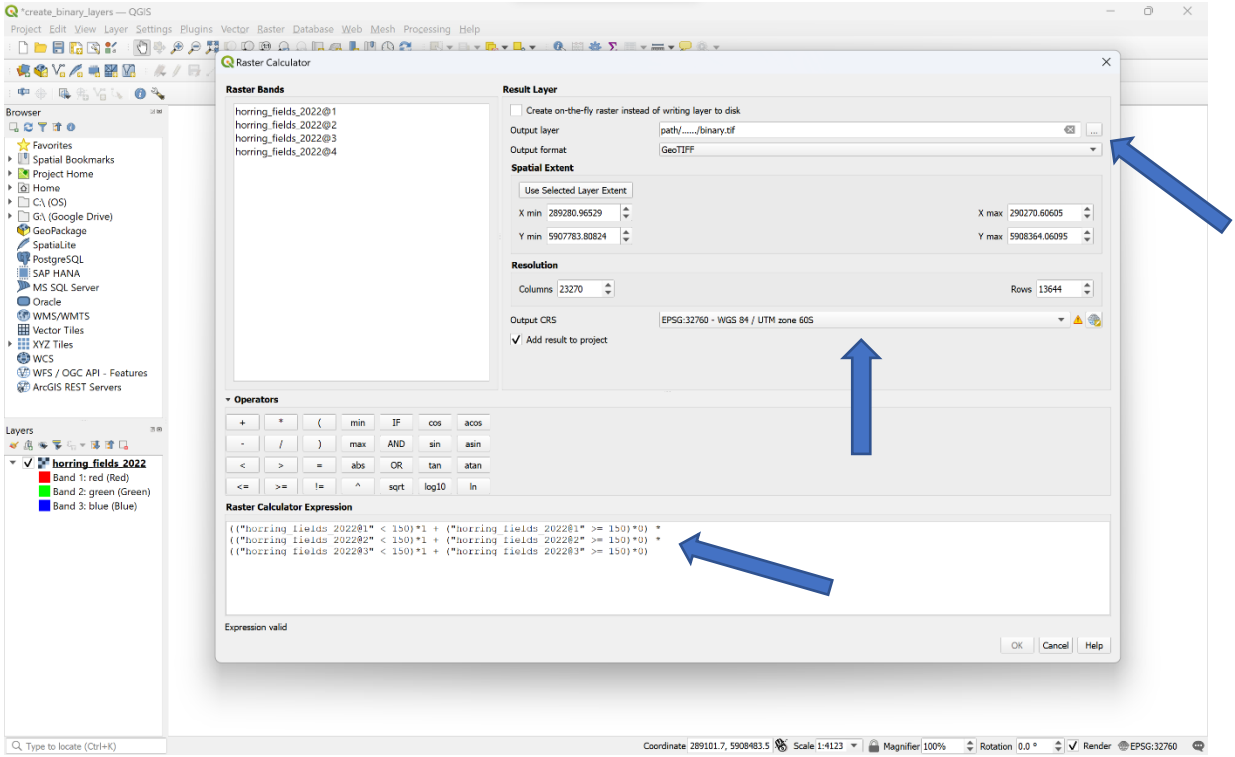
2- Open “Raster Calculator” in “Raster”.



3- In this window ("Raster Calculator"), all parameters for creating the binary layer are entered.



4- At this point I entered the expression (in the 'Raster Calculator Expression' field) and the path in which to save the layer (in the 'Output layer' field). Regarding CRS, format and others, I left the default values, but these can be changed.



The expression basically consists of multiplications by 0 or 1 depending on the thresholds.

A template of the expression follows:

```
(("raster_data@1" < threshold_1)*1 + ("raster_data@1" >= threshold_1)*0) *
(("raster_data@2" < threshold_2)*1 + ("raster_data@2" >= threshold_2)*0) *
(("raster_data@3" < threshold_3)*1 + ("raster_data@3" >= threshold_3)*0)
```

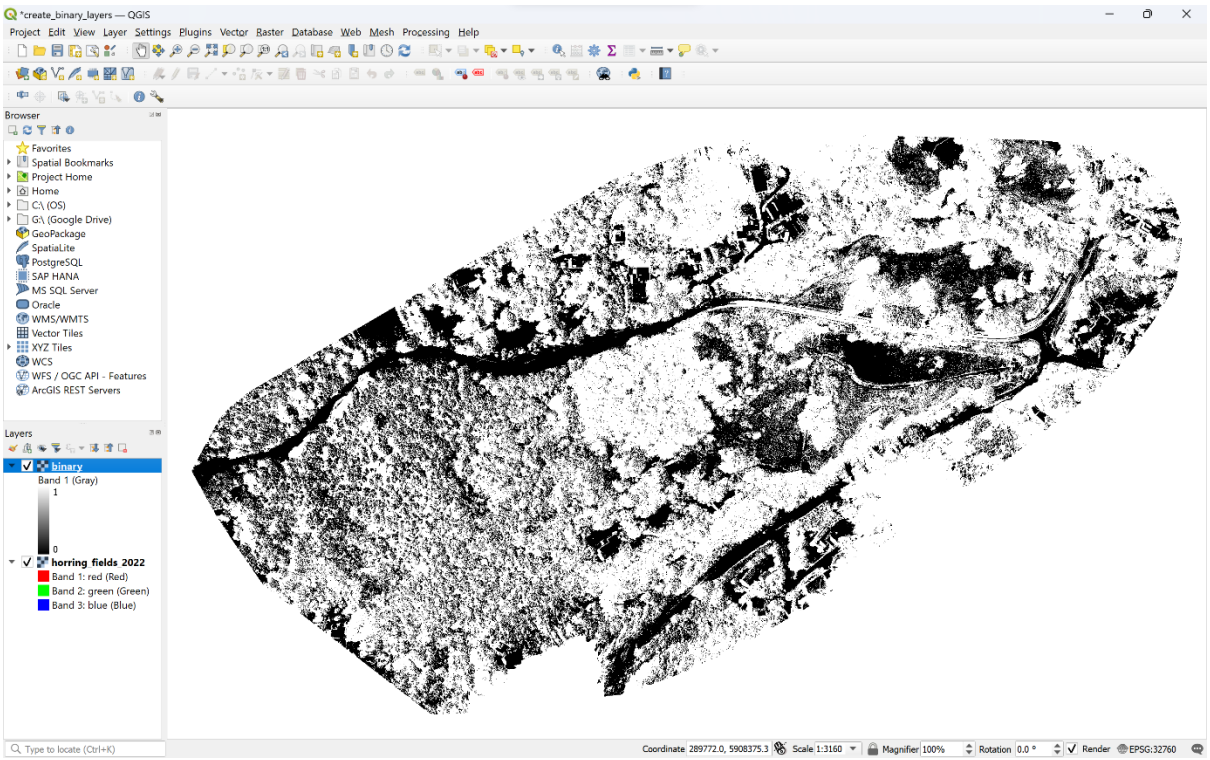
Where:

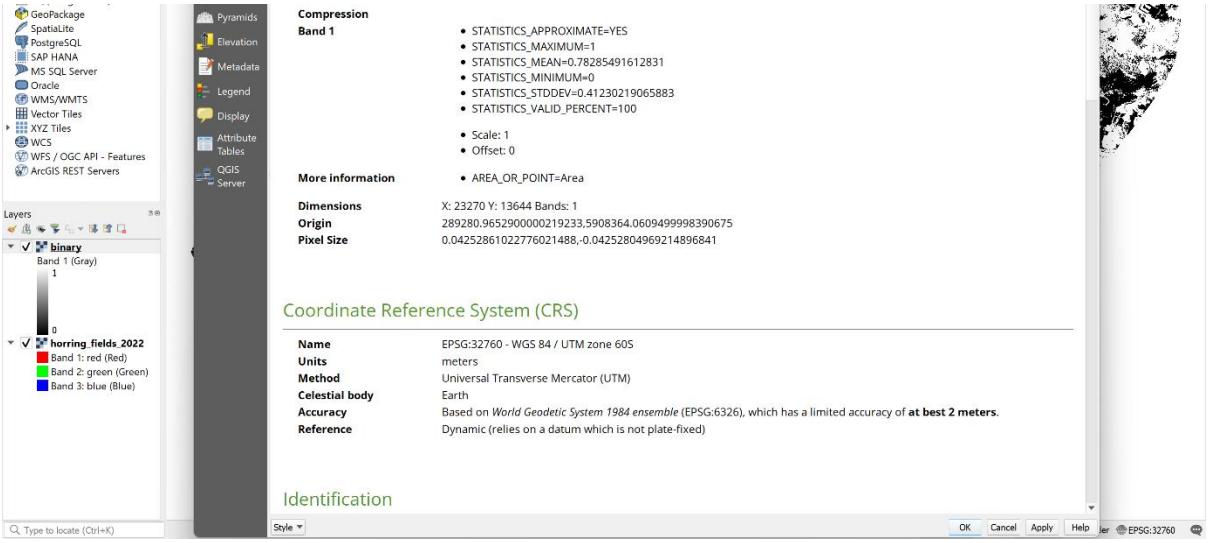
- "raster_data@1" means band 1 of the raster_data file and so on.
- Thresholds are given different names because they can take on different values between one band and another.

Of course, different combinations of thresholds can offer very different results.

5- Using the following expression, I obtained the below binary layer.

```
(("horring_fields_2022@1" < 150)*1 + ("horring_fields_2022@1" >= 150)*0) *
(("horring_fields_2022@2" < 150)*1 + ("horring_fields_2022@2" >= 150)*0) *
(("horring_fields_2022@3" < 150)*1 + ("horring_fields_2022@3" >= 150)*0)
```




GeoPackage
SpatiaLite
PostgreSQL
SAP HANA
MS SQL Server
Oracle
WMS/WMTS
Vector Tiles
XYZ Tiles
WCS
WFS / OGC API - Features
ArcGIS REST Servers
Layers
binary
Band 1 (Gray)
1
0
horring_fields_2022
Band 1: red (Red)
Band 2: green (Green)
Band 3: blue (Blue)
Type to locate (Ctrl+K)
Pyramids
Elevation
Metadata
Legend
Display
Attribute Tables
QGIS Server
Compression
Band 1
STATISTICS_APPROXIMATE=YES
STATISTICS_MAXIMUM=1
STATISTICS_MEAN=0.78285491612831
STATISTICS_MINIMUM=0
STATISTICS_STDDEV=0.41230219065883
STATISTICS_VALID_PERCENT=100
Scale: 1
Offset: 0
More information
AREA_OR_POINT=Area
Dimensions
X: 23270 Y: 13644 Bands: 1
Origin
289280.9652900000219233,5908364.0609499998390675
Pixel Size
0.042528610227760214 88,-0.042528049692148968 41
Coordinate Reference System (CRS)
Name
EPSG:32760 - WGS 84 / UTM zone 60S
Units
meters
Method
Universal Transverse Mercator (UTM)
Celestial body
Earth
Accuracy
Based on World Geodetic System 1984 ensemble (EPSG:6326), which has a limited accuracy of at best 2 meters.
Reference
Dynamic (relies on a datum which is not plate-fixed)
Identification
Style
OK
Cancel
Apply
Help
EPSG:32760