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A Practical Guide to Downloading and Using QGIS.



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1. Introduction

Quantum GIS (QGIS) is a free Open-Source Geographical Information System software. It is a powerful tool that all enables the user to compile, edit and analyse spatial data. QGIS can be run on a multitude of platforms such as Windows, Mac, Linux, BSD and Android.

With the help of this guide, a good base-map of the geology of Ireland is now accessible to a wide audience. Our map data in this format is a practical and accessible resource for people across a range of industries or interests and will serve to guide and assist future projects.

The following guide will give step by step instructions of how to download QGIS to Windows 10. This guide is also available as a video; <https://youtu.be/JlxLm-9x6GM>

NOTE: QGIS no longer supports Windows 7. Every four months QGIS release a new version of the software. You may be downloading a newer version of QGIS than the instructions provided below. The appearance may vary but the steps will be similar. The version used in this guide is 3.24.2

“Click” = Left click

“Right Click” = Right click



1.1 Downloading QGIS to Windows 10 Desktop

1. In your browser navigate to <https://qgis.org/en/site/forusers/download.html> or type in qgis download. See *Figure 1*.

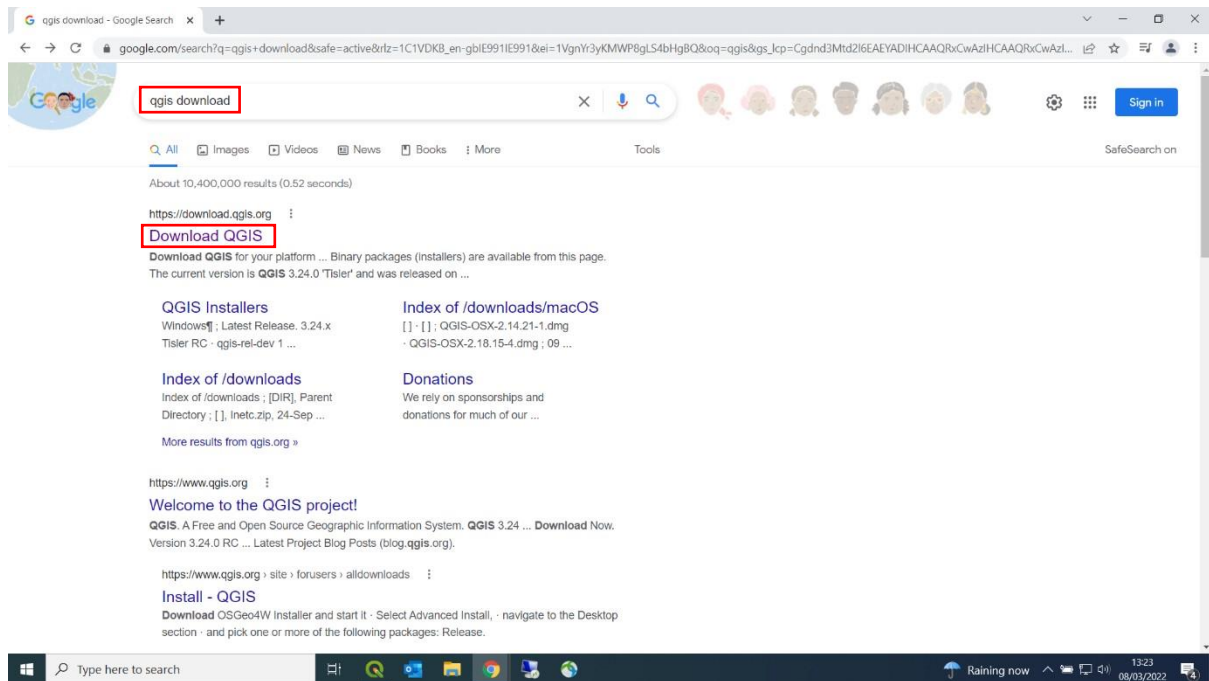


Figure 1. Type in "qgis download".



2. Scroll down to Download for Windows. See *Figure 2*.

For Mac, Linux, BSD and apps for mobiles and tablets keep scrolling and you will see the associated downloads and instruction for those applications.

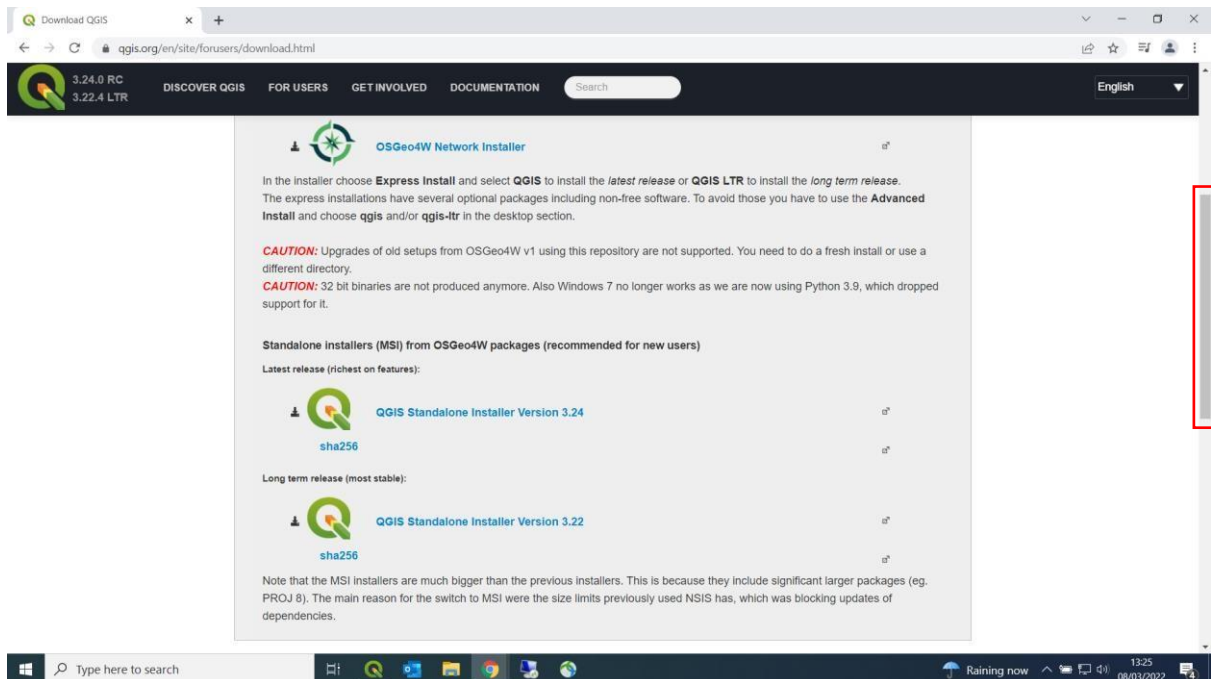


Figure 2. Scroll down to Windows.

Two versions are available: **Latest Release (LR)** and **Long-Term Release (LTR)**.

The LR version has the newest and most up to date features available, but LTR is more stable and has less bugs associated with it. It is recommended to install the LR if you are a new user as you will get the most up to date version. If you require software where stability for your workload is essential and the outlook never changes appearance, download the LTR version.



3. Click the version you would like to download. In the bottom left you will see QGIS downloading on to your computer. The amount of time it takes to download can vary depending on the speed of your internet. A pop-up message asking to support and donate to QGIS will appear. You can click “Close this message”. See *Figure 3*.

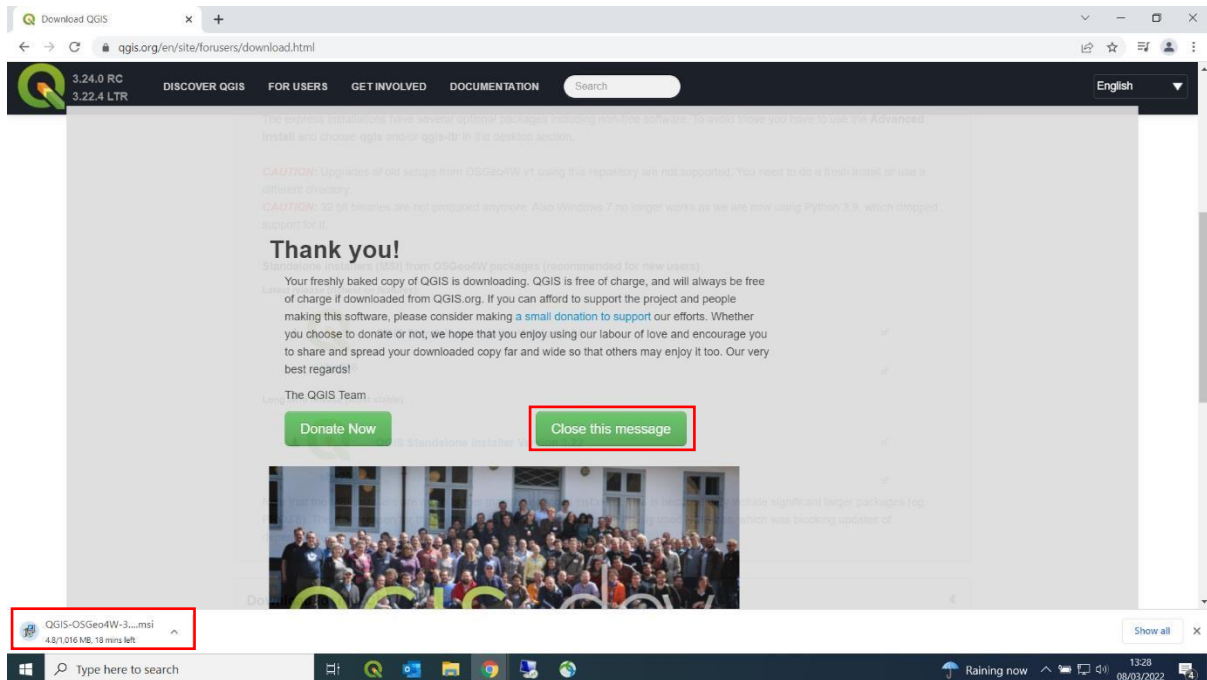


Figure 3. QGIS will begin downloading. Click “Close this message” unless you would like to donate.



4. At the bottom left corner of the screen right click on the “QGIS-OSGeo Windows Installer Package” (1) and left click “Show in folder” (2). See *Figure 4*.

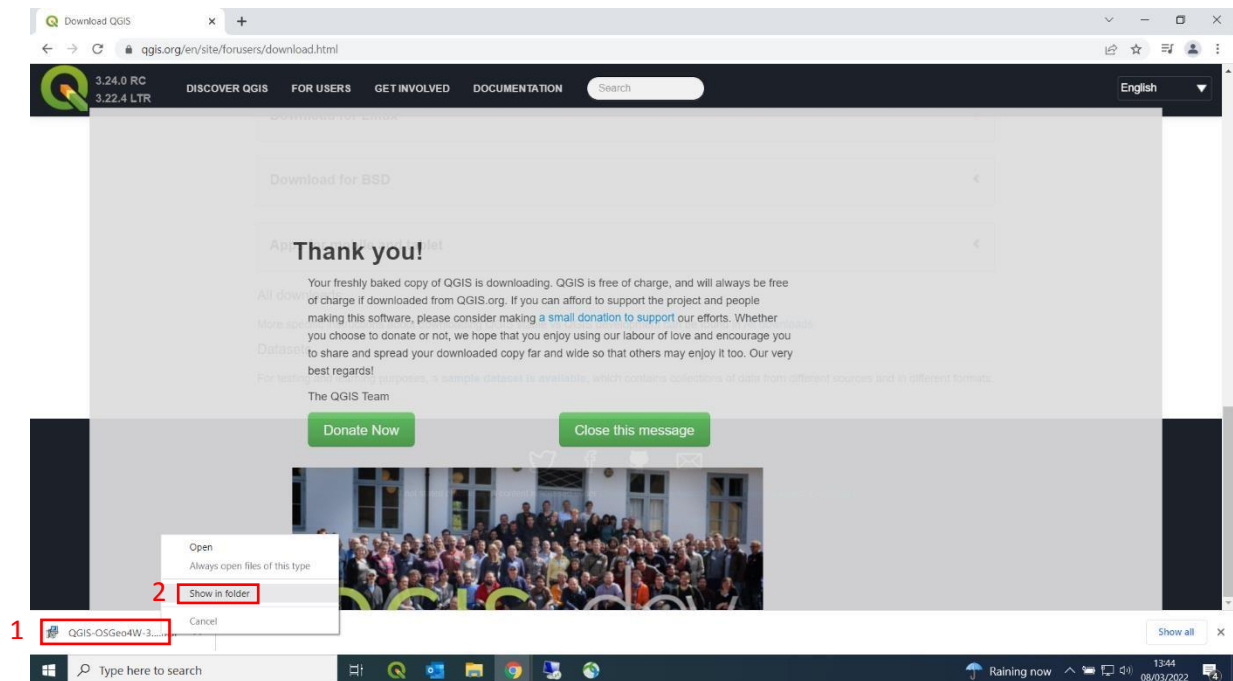


Figure 4. Right click on the QGIS-OSGeo and click “Show in folder”.

5. In File Explorer (1) navigate to your Downloads folder (2). Right click the QGIS-OSGeo installer package (3) and left click “Install” (4) See *Figure 5*.

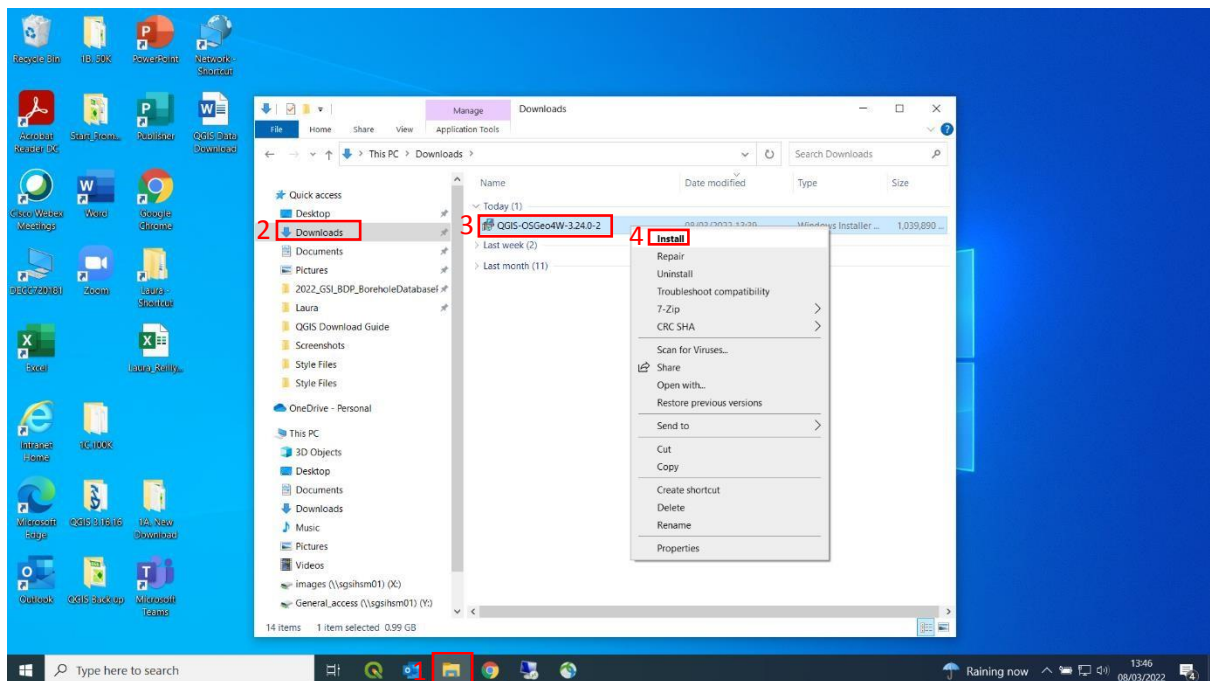


Figure 5. In File Explorer and downloads right click on the QGIS-OSGeo Installer and click “Install”.



6. Installation should start with the Setup Wizard appearing. Click “Next”. See *Figure 6*.

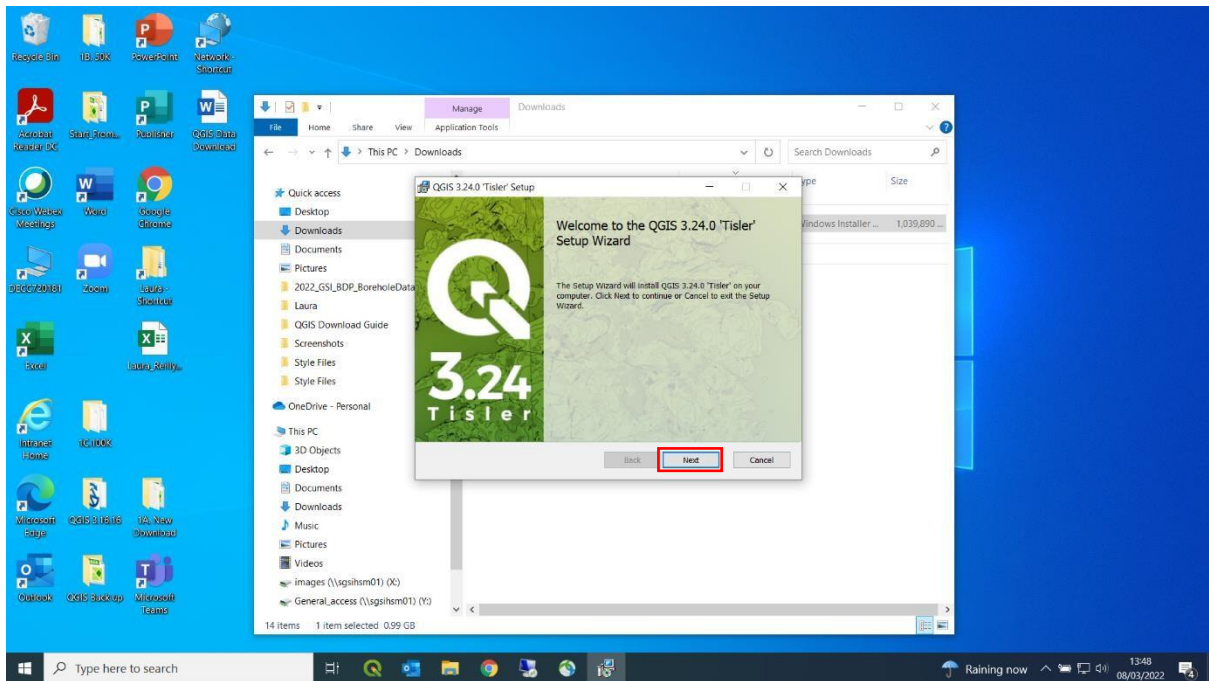


Figure 6. Click “Next”.

7. Click “I accept the terms in the License Agreement”. You should now see a tick in the box ☒ I accept the terms in the License Agreement (1). Click “Next” (2). See *Figure 7*.

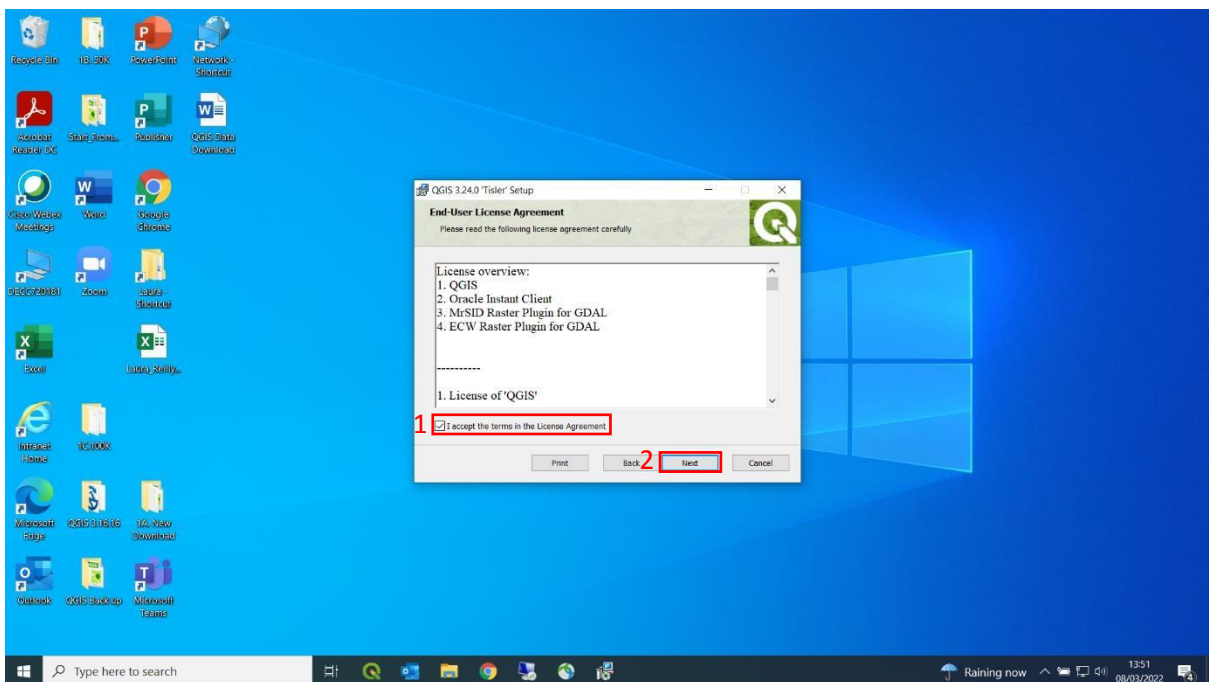


Figure 7. Accept the terms of the licence agreement and click “Next”.



8. Next, the Destination Folder will appear containing a default path where the application will be installed on your computer. If you are happy with this location, click “Next” (1). See *Figure 8*. then go to step 10. If you would like to change this location, click “Change” (2) and see step 9.

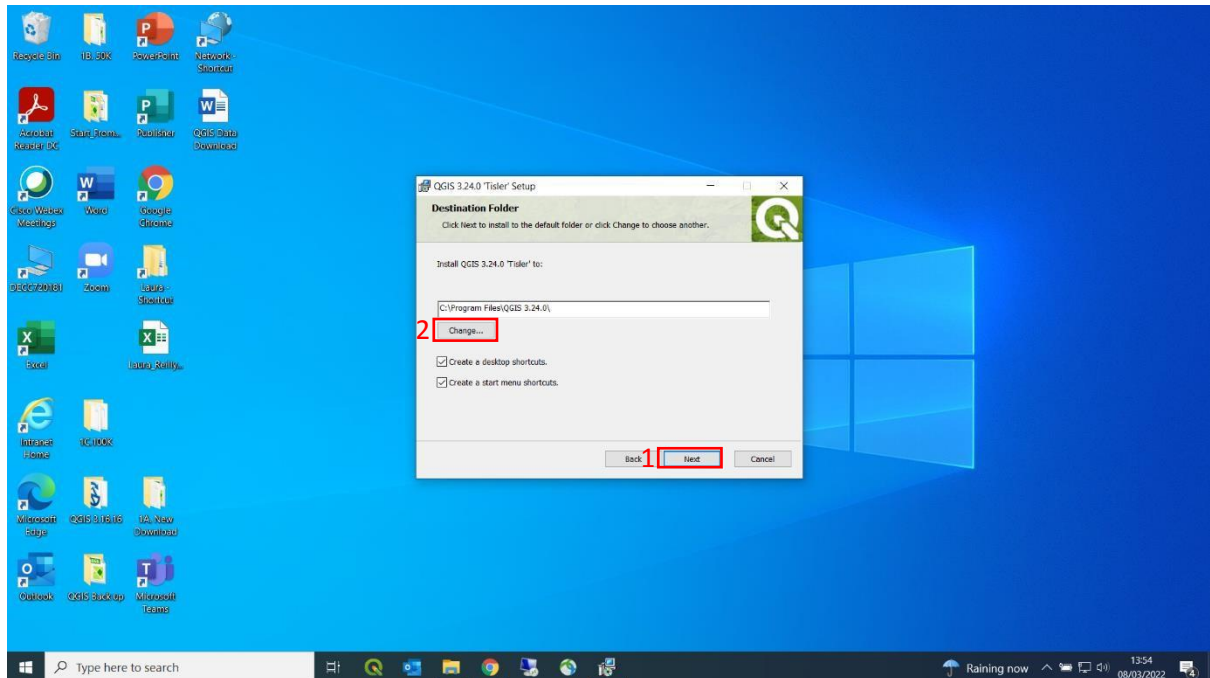


Figure 8. Click “Change” if you would like to change the Destination Folder or “Next” to continue downloading.



9. If you would like to change the default path, click “Change” *Figure 8*. This allows you to map where on your computer you want QGIS installed. See *Figure 9*.

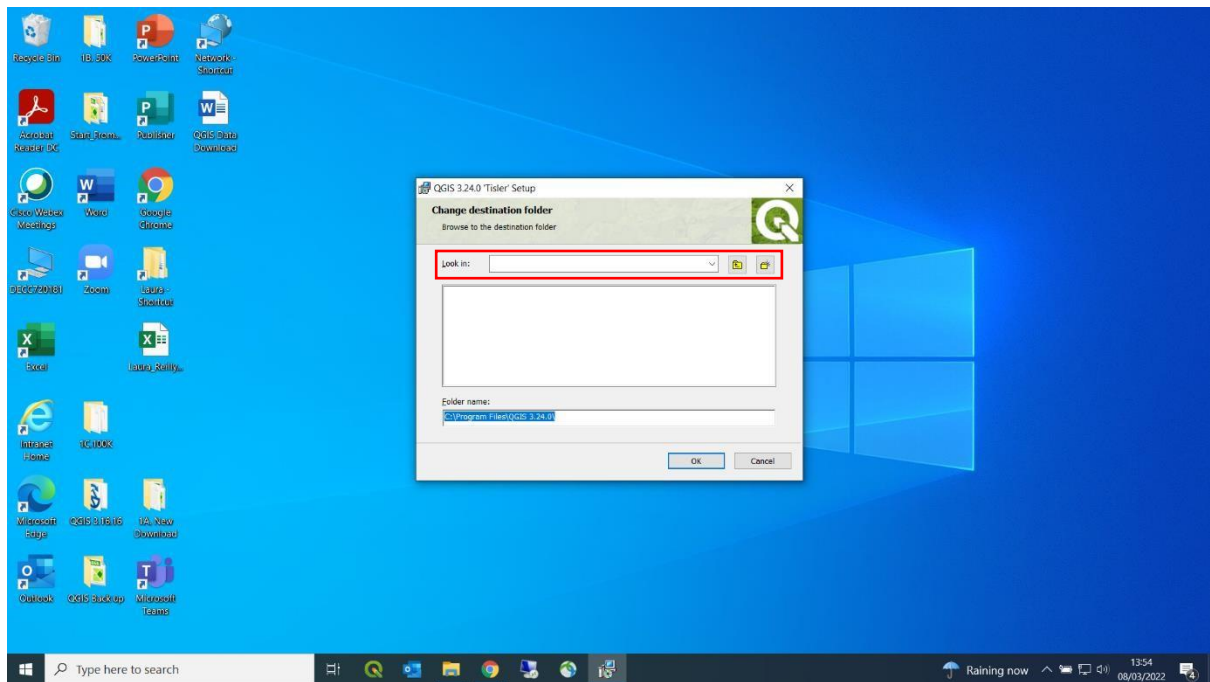


Figure 9. You can map what destination you would like the software to be saved.

10. Then click “Install”. See *Figure 10*.

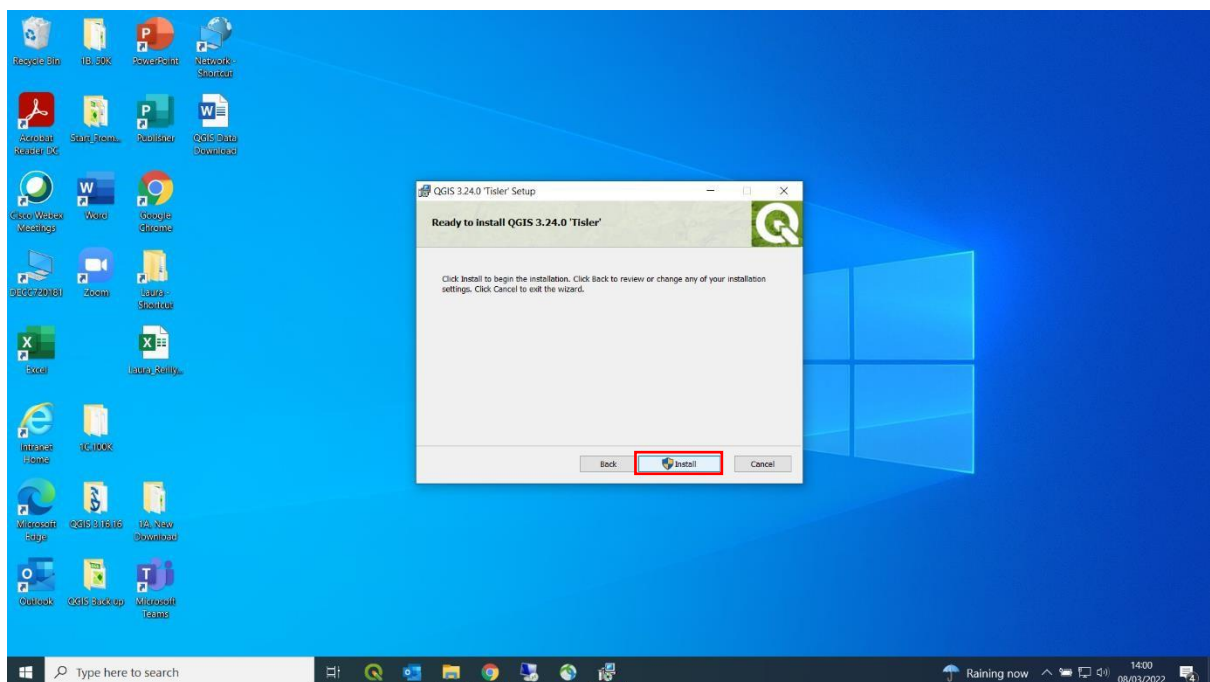


Figure 10. Click “Install”.



11. When the installation is complete click “Finish” to exit the Setup Wizard. See *Figure 11*.



Figure 11. Click “Finish”.

12. In your search bar type in “QGIS Desktop” and you should see an application for QGIS, click open. See *Figure 12*.

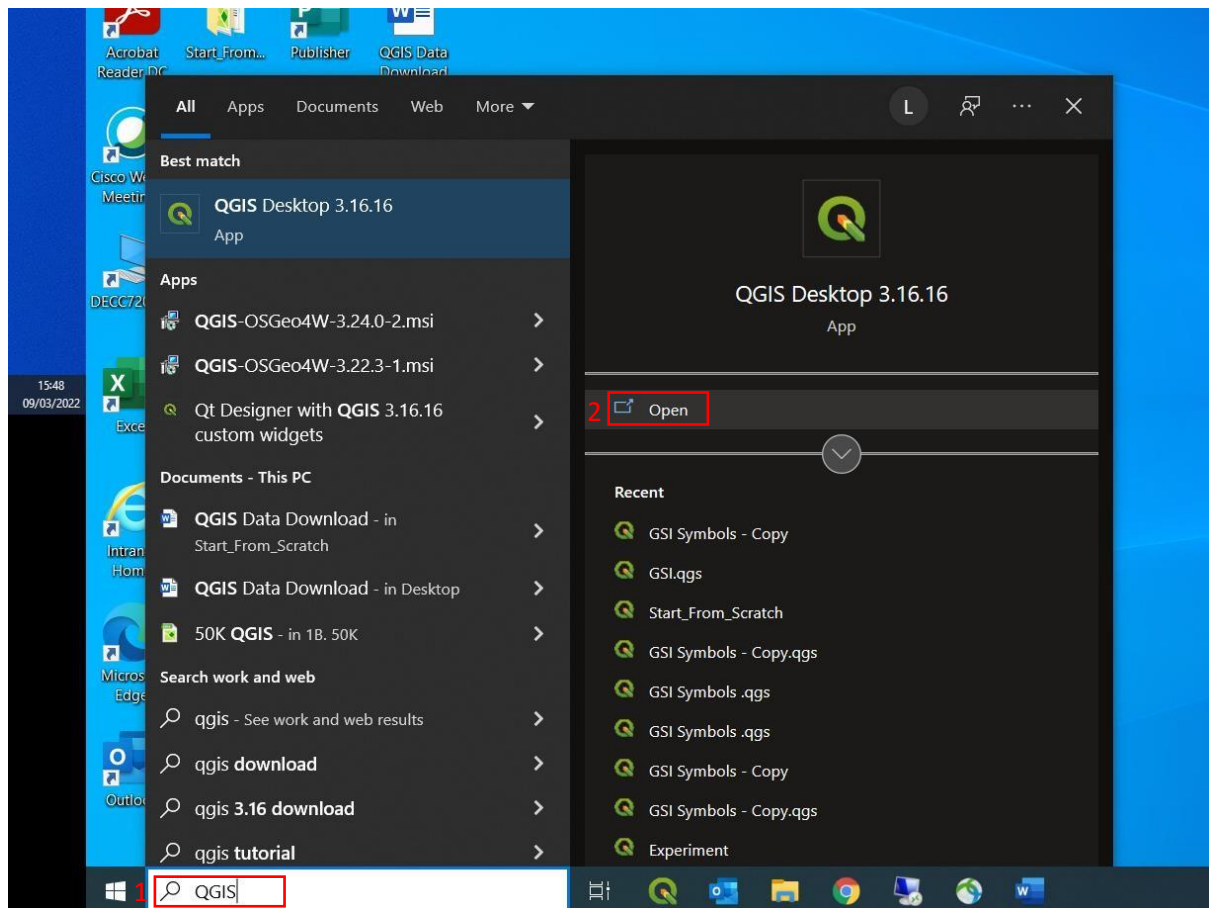


Figure 12. Type in QGIS into the search bar.



13. The application should now open. See *Figure 13*. You should see the basic interface:

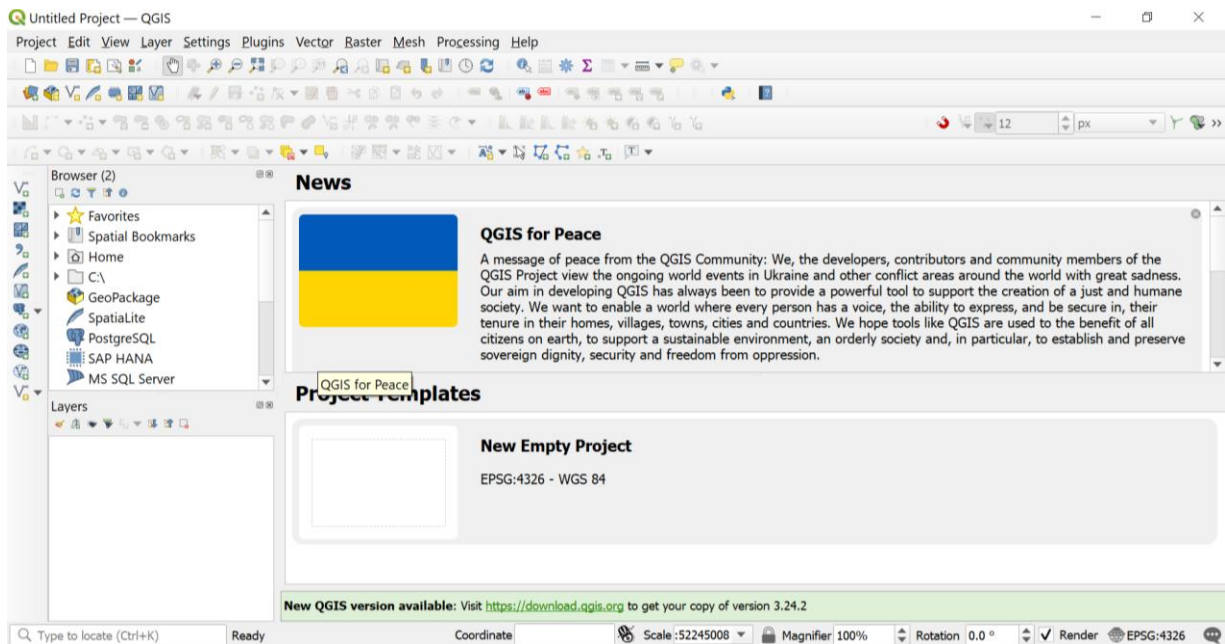


Figure 13. You should now see the QGIS interface.



2. Accessing and Downloading the Data

2.1 Downloading Zip Files

1. In your browser, navigate to the GSI website or click “Data and Maps” (1) then “Bedrock” (2) or click the link <https://www.gsi.ie/en-ie/data-and-maps/Pages/Bedrock.aspx> See Figure 14.

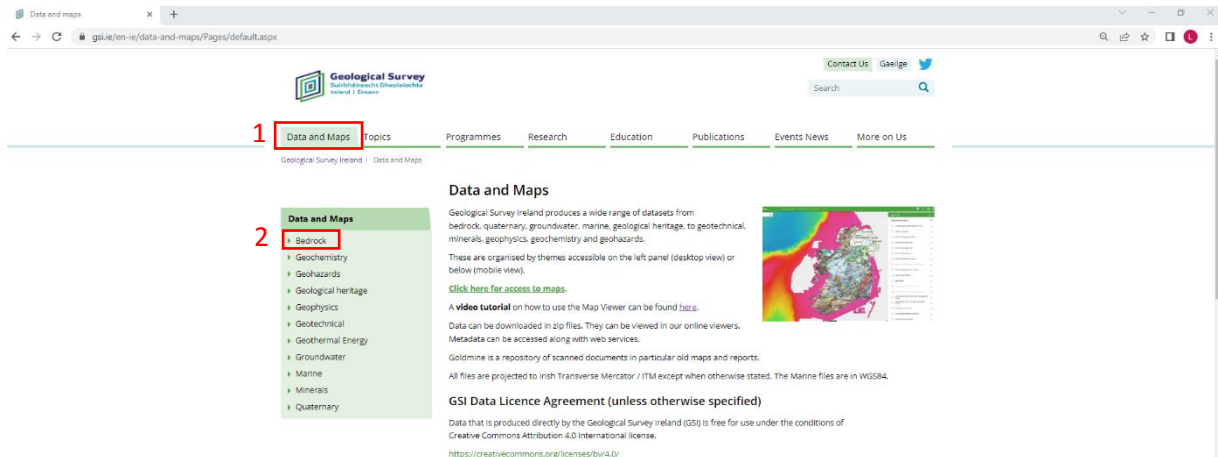


Figure 14. Navigate to the GSI website. Click Data and Maps then Bedrock.

2. Scroll down to “Bedrock 100k” (1). Click “Zip File” beside Data Download (2). The file will begin to download (3). See Figure 15.

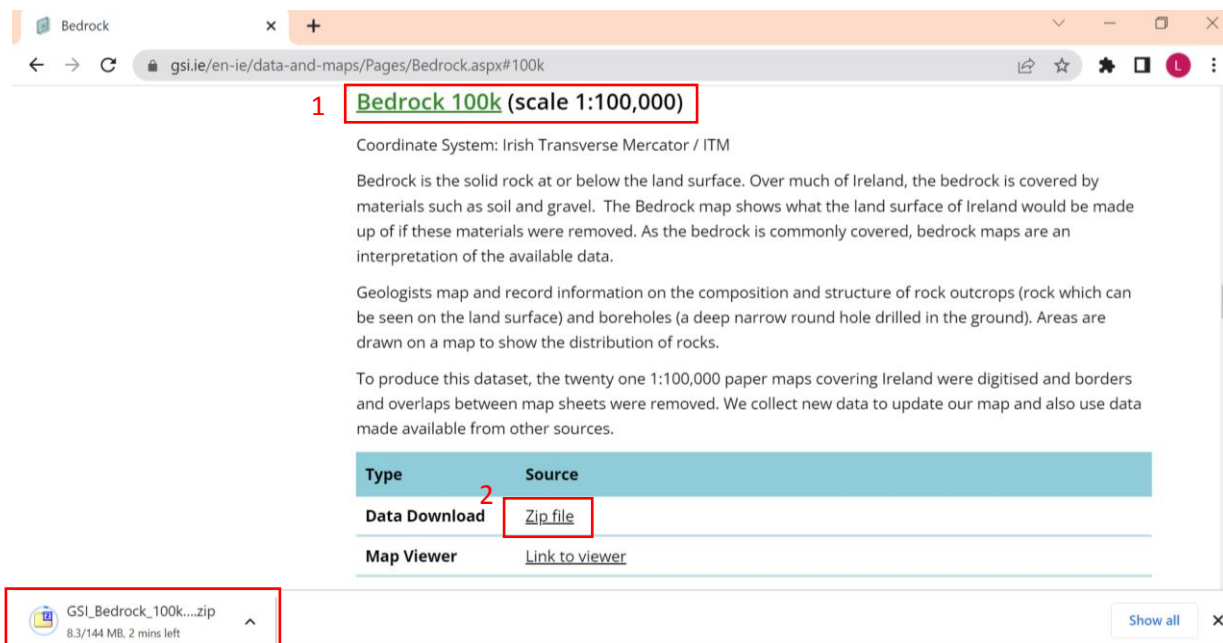


Figure 15. Scroll down to “Bedrock 100k” and click the “Zip File” which will begin to download.



3. In File Explorer (1) click Downloads (2). You should see a zipped Folder named “GSI_Bedrock_100K” (3). See *Figure 16*.

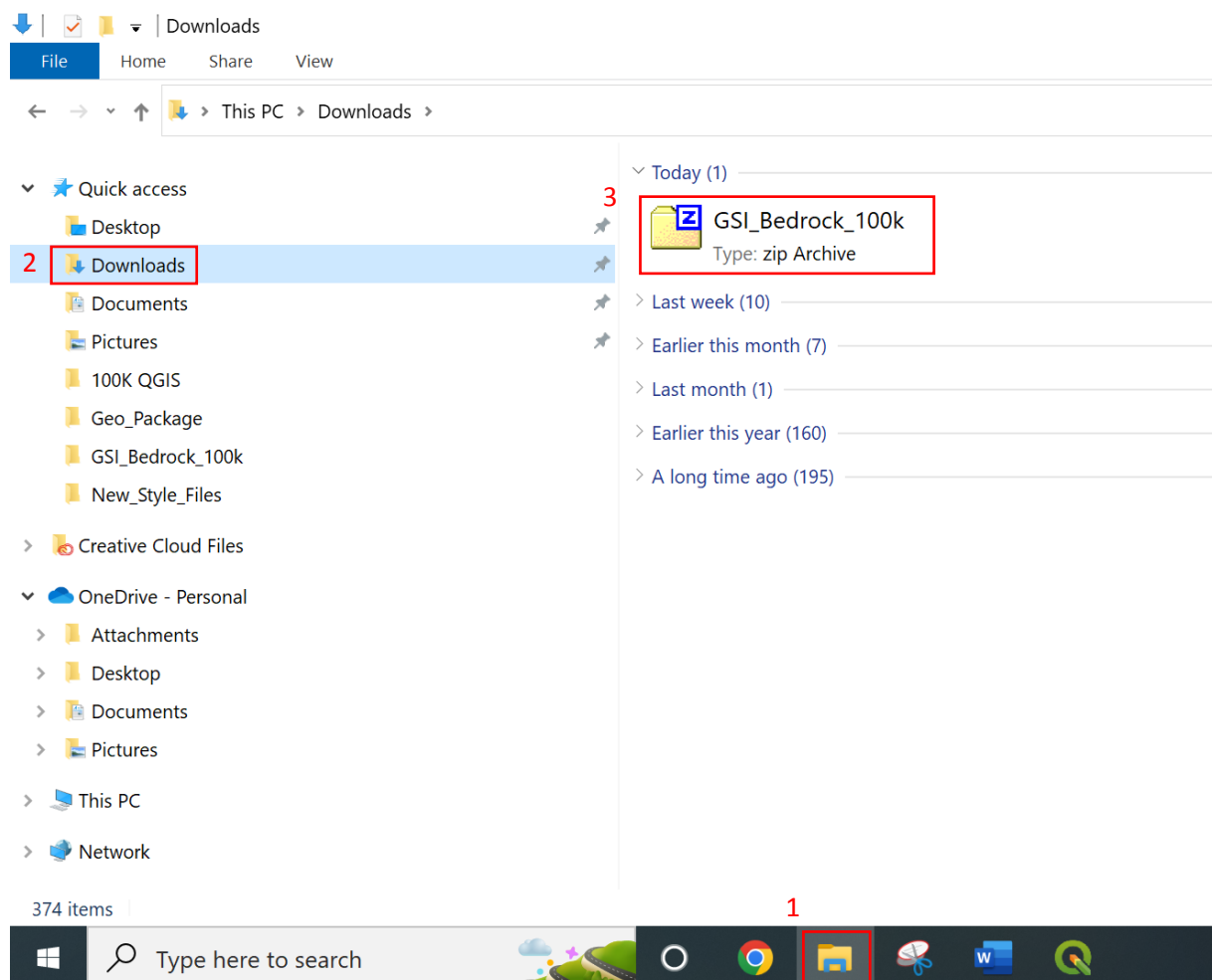


Figure 16. The folder should be located in File Explorer in Downloads



4. It can be difficult to keep track of files if you download data regularly. Pick a destination on your PC where you would like to store and save your files with organised and consistent naming conventions. In this destination create a new Folder by right clicking on a blank space (1). Click “New” (2) then click “Folder” (3) and name it. See *Figure 17*.

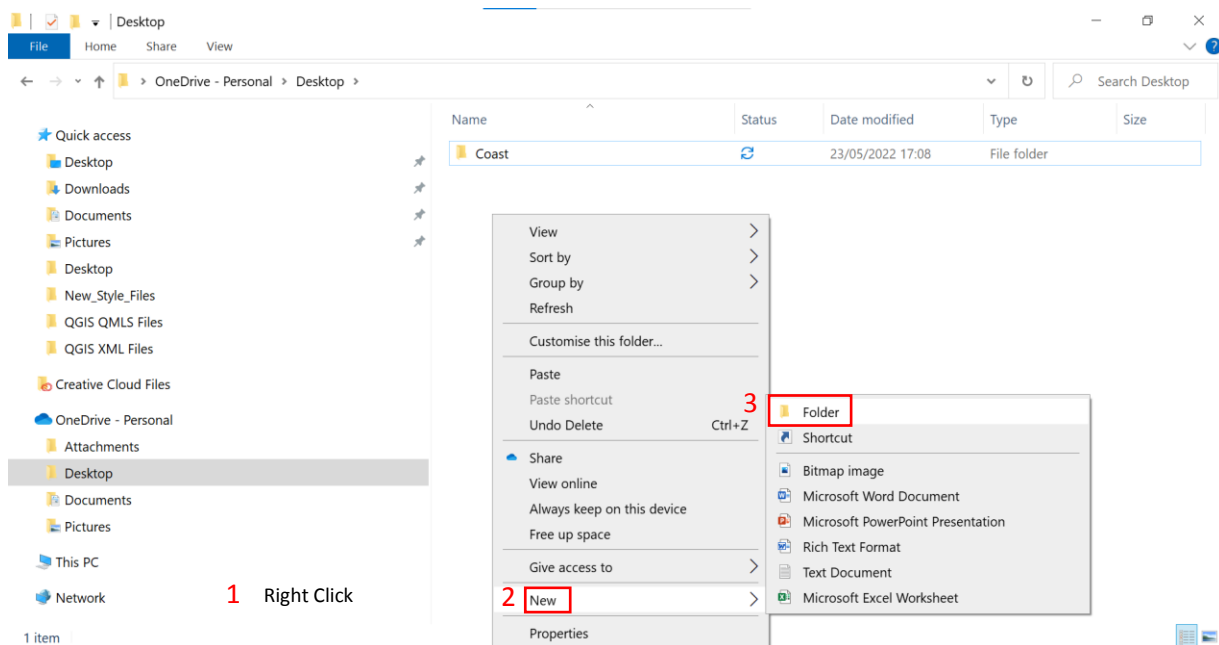


Figure 17. Create a new Folder

5. Write down the exact location of where the folder is now saved on your computer as this will make finding your data later easier. In *Figure 18*. For example, below the GSI_Bedrock_100K Folder is now located at:

📁 > OneDrive - Personal > Desktop > GSI_Bedrock_100k



6. Navigate back to Downloads (1), Click on the 100K QGIS folder (2) it should appear to be highlighted in blue and then right click “Copy” (3). See Figure 18.

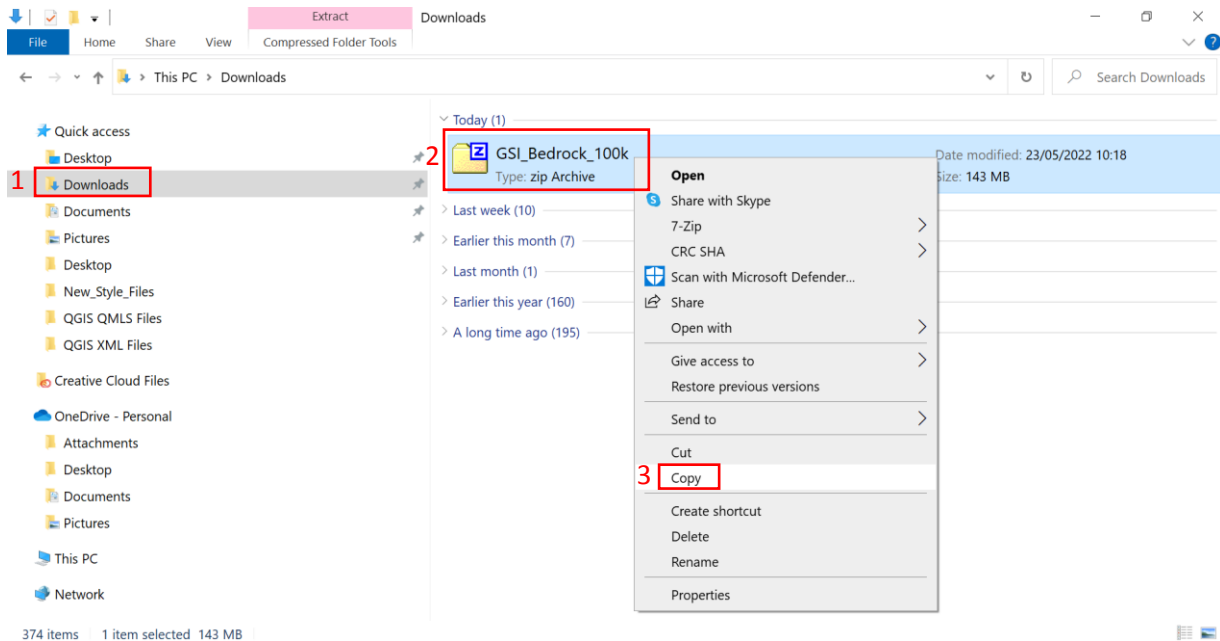


Figure 18. Highlight the folder then right click “Copy”.

7. Click on the destination location and open the new folder you have created on your PC. Right click “Paste”. See Figure 19.

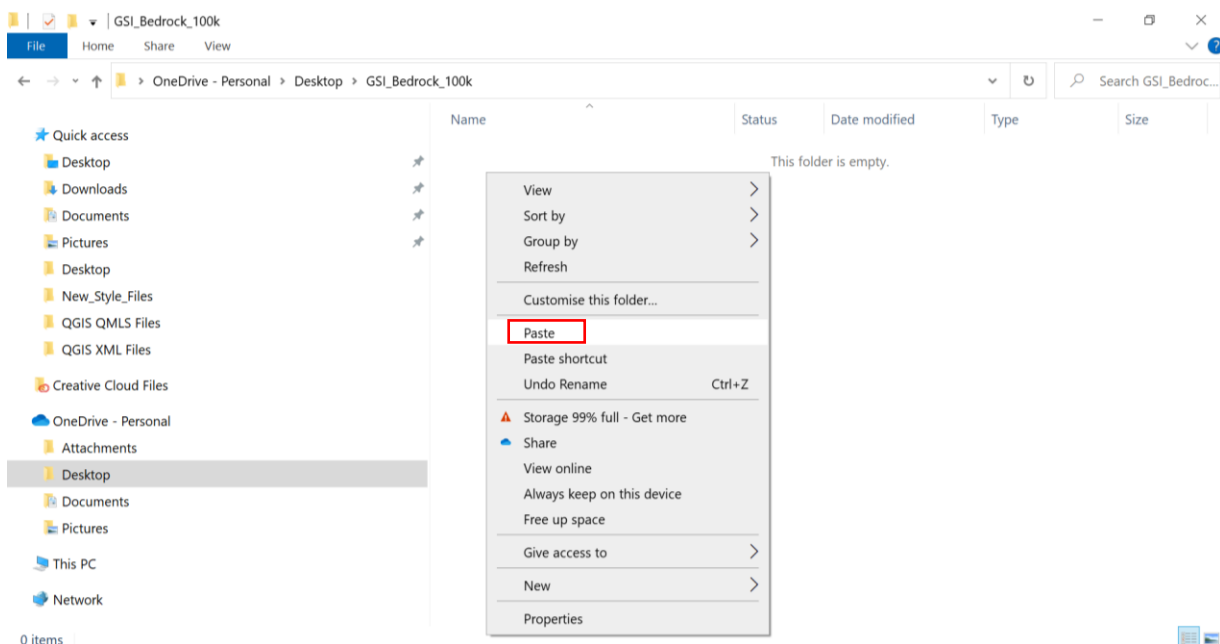


Figure 19. Paste the Folder to your specific location.



8. To unzip the compressed folder, click on the Folder 100K (It should be highlighted in blue) (1), Right click “7-Zip” (2) then “Extract Here” (3). See *Figure 20*.

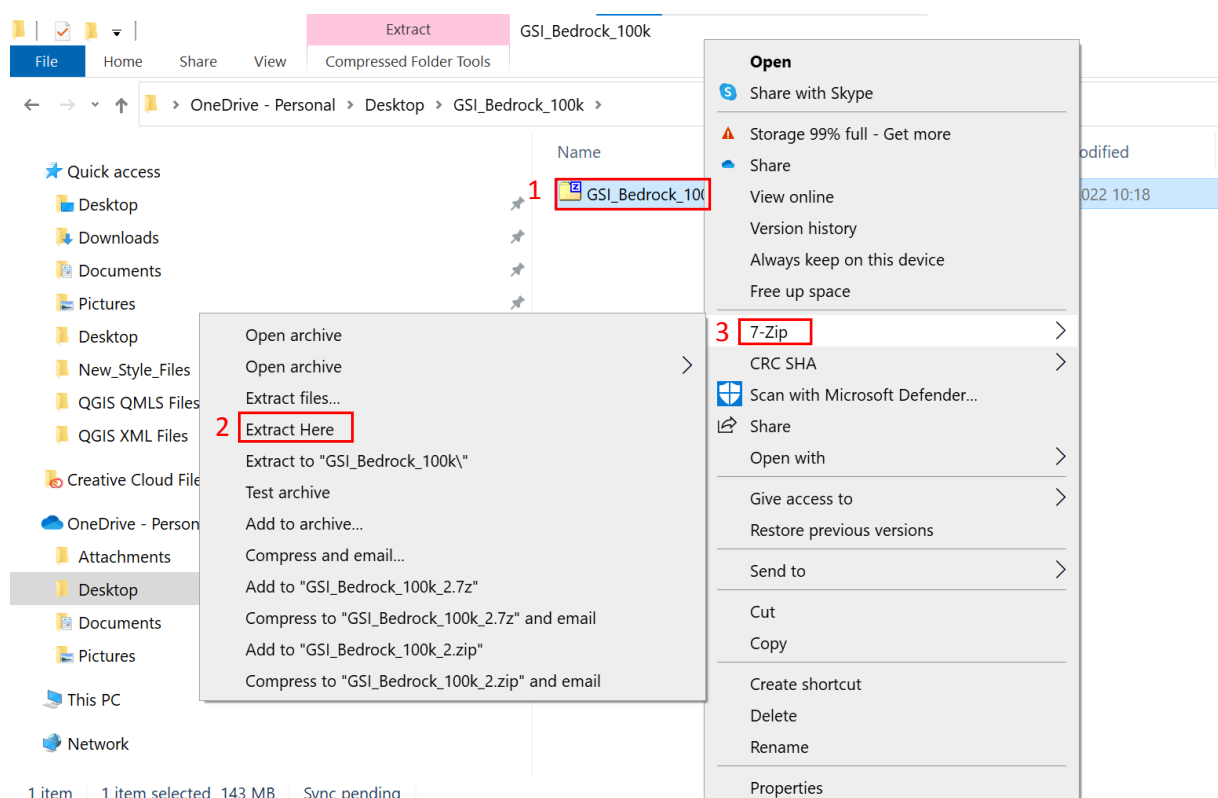


Figure 20. Click on the folder then right click and click “7-Zip” then “Extract Here”.

9. The file should now be unzipped, and a normal file icon will appear. See *Figure 21*. You can delete the zipped folder.

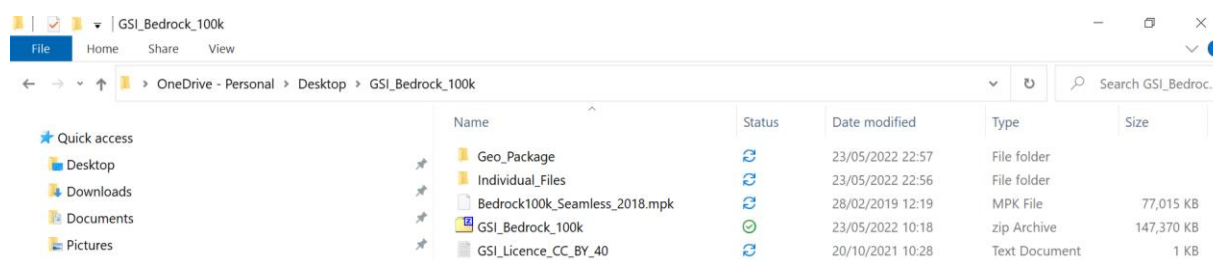


Figure 21. You should now see the Folder 100K QGIS appear.



10. When you click the Folder “GSI_Bedrock_100K” you should see two separate folders within it called “Geo-Package” & “Individual_Files”. See *Figure 22*.

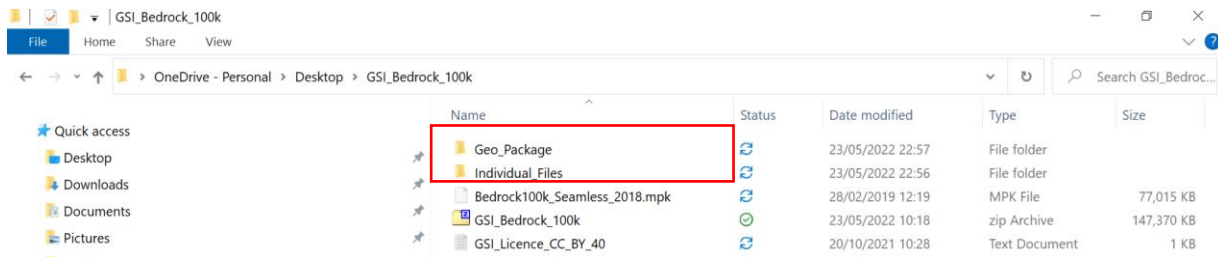


Figure 22. Two folders within “GSI_Bedrock_100K”.

11. These folders contain multiple different file types you will use in QGIS. See *Figures 23 and 24*.

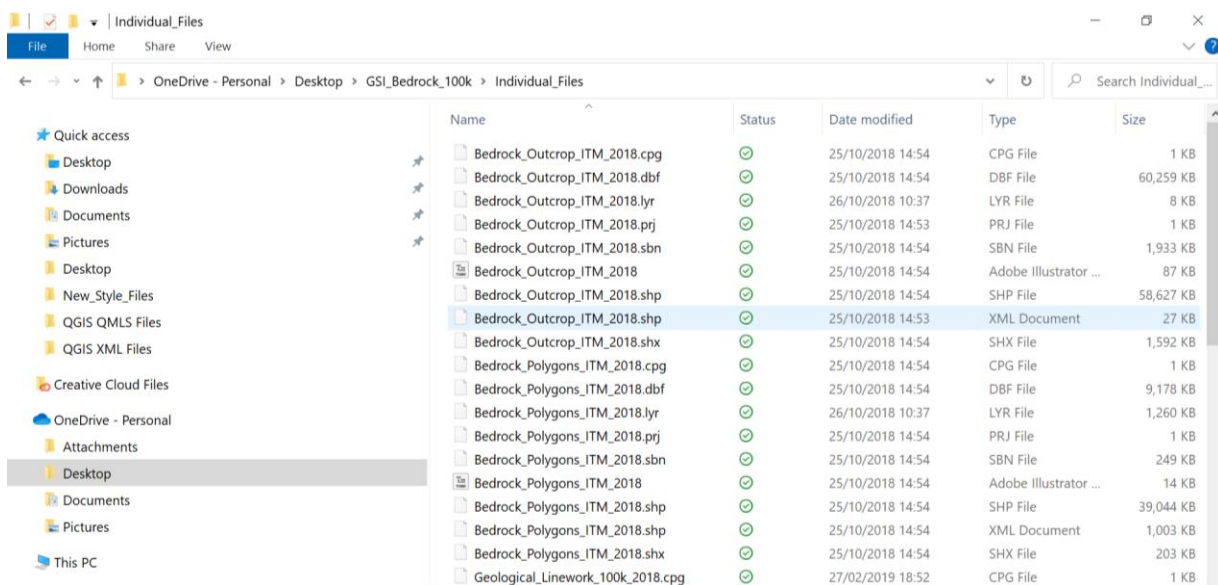


Figure 23.

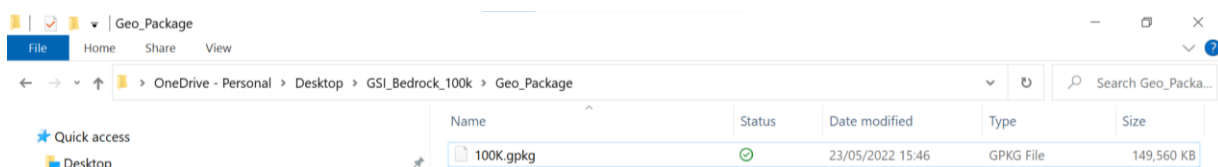


Figure 24.



3. QGIS

3.1 Starting a New Project

1. Open QGIS. You should see the basic interface:

- 1. Menu Bar
- 2. Toolbars
- 3. Browser Panel
- 4. Layer Panel
- 5. Map Canvas
- 6. Status Bar

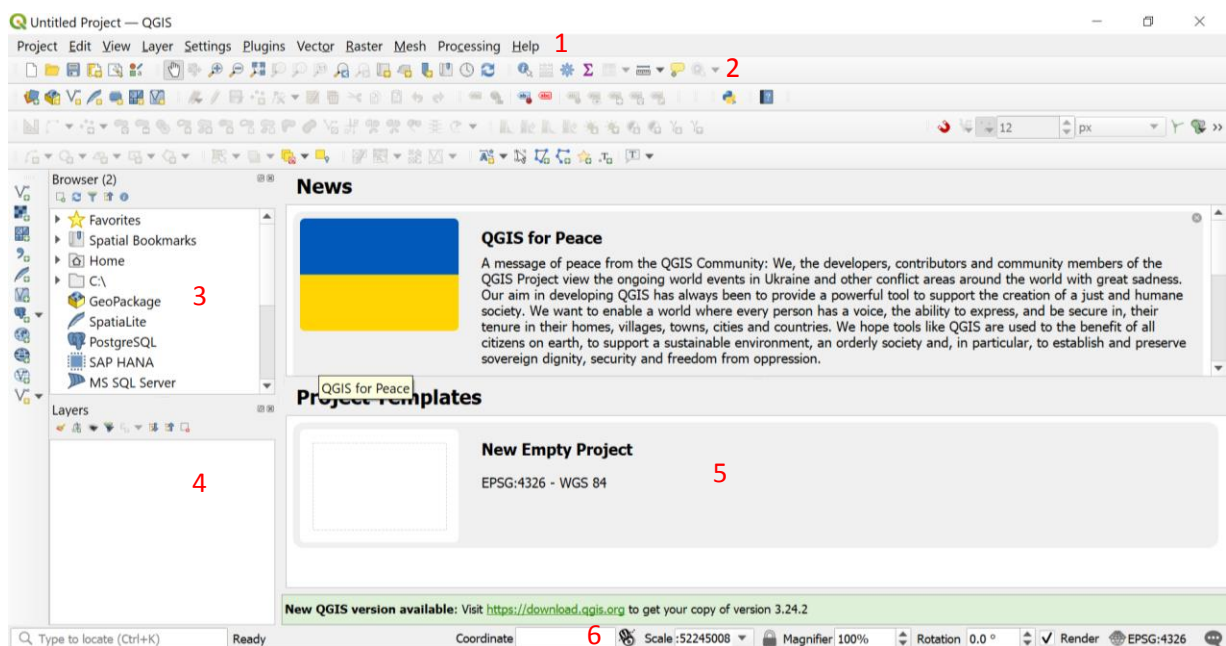


Figure 25. The QGIS interface.

Note: The appearance may vary if the version of QGIS you have downloaded is more recent.



2. In the Menu Bar click “Project” (1) followed by “New” (2) See *Figure 26*.

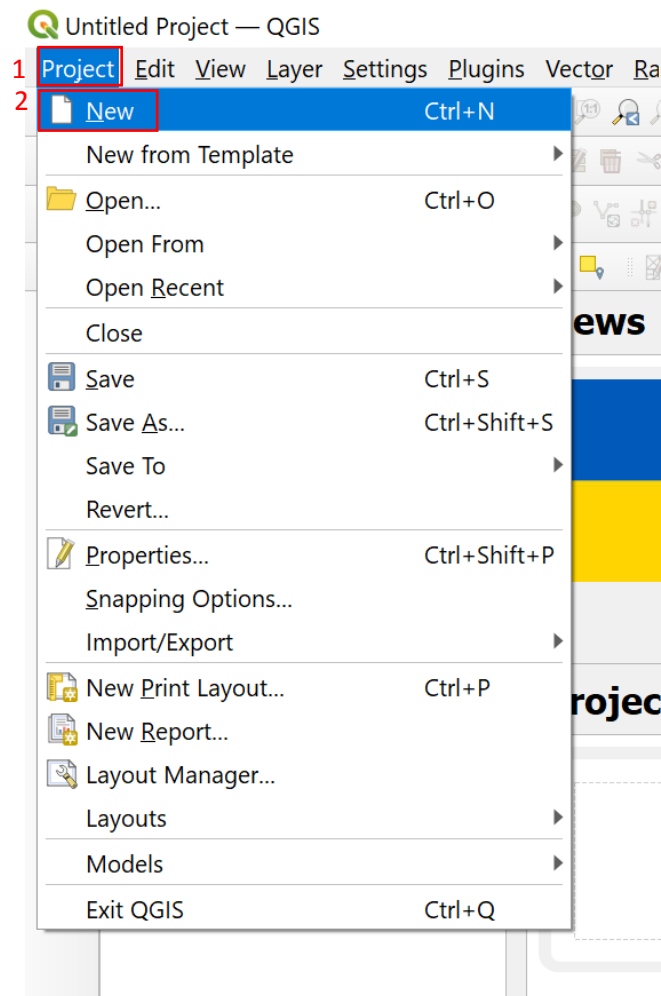


Figure 26. Click “Project” then “New”.



3. The map canvas will now appear blank. To set your Co-Ordinate Reference System (CRS) click the bottom right EPSG icon (1). In filter type in 2157 (2). Click on IRENET 95/Irish Transverse Mercator EPSG:2157 (3) and click “Apply” (4) and “Ok” (5). See *Figure 27*.

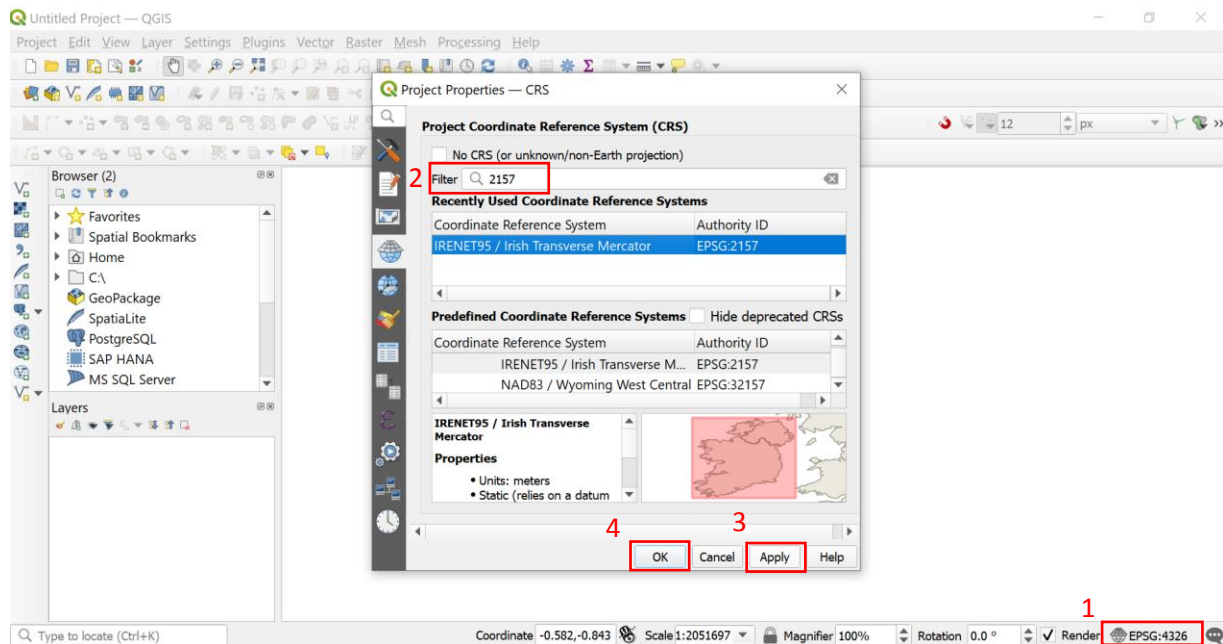


Figure 27. Setting the correct CRS.



4. The easiest way to bring layers into QGIS is from the Browser Panel (1). You can extend the Browser Panel horizontally and vertically at any stage. Navigate to where you have your 100K QGIS Folder saved on your computer (You should have this written down from earlier NOTE: some drives may be hidden in other locations). Click the arrows on the left-hand side to open drives and folders or scroll down to find the correct location. Start at the Home icon. See *Figure 28*.

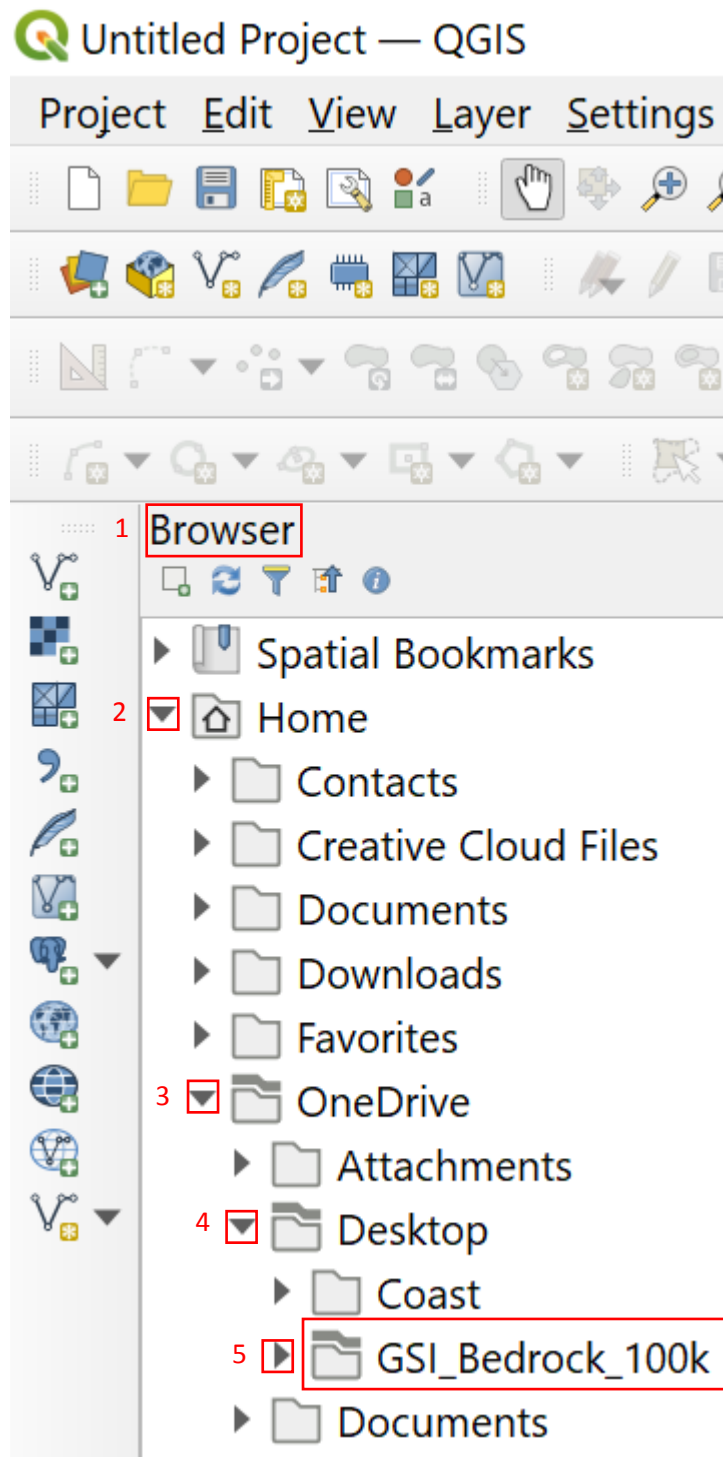


Figure 28. In the browser panel navigate to where you saved your Folder 100K QGIS.



5. You can right click on the folder “GSI_Bedrock_100K” (1). Right click “Add as a Favorite” (2). Making your folder a favorite saves time navigating through multiple drives and folders. See *Figure 29*.

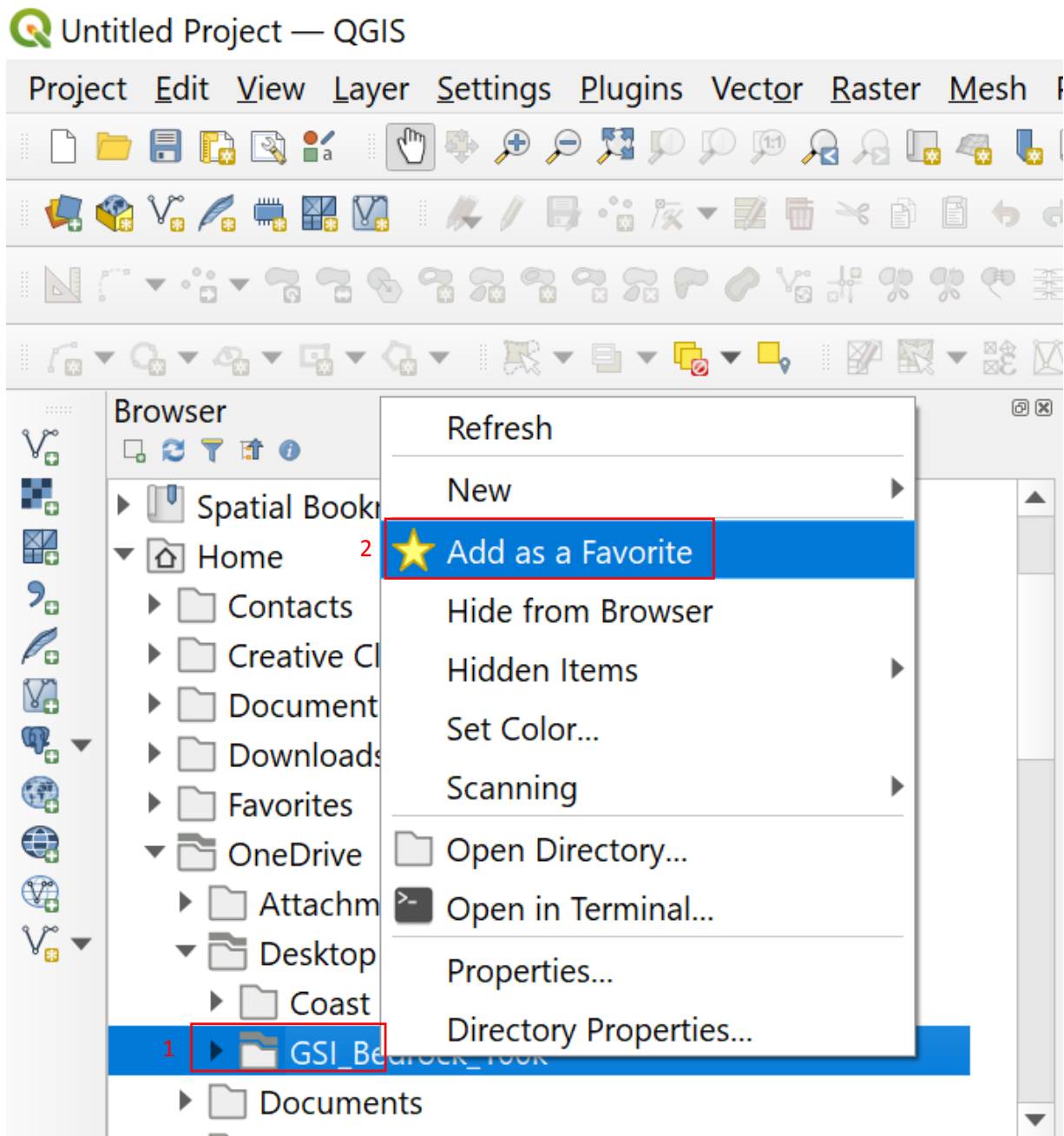



Figure 29. Right click on the folder and click “Add as a favorite”.



6. If you scroll up, the files should now appear at the top of the Browser Panel underneath  Favorites . Use the arrows on the left-hand side to open the files. See Figure 30.

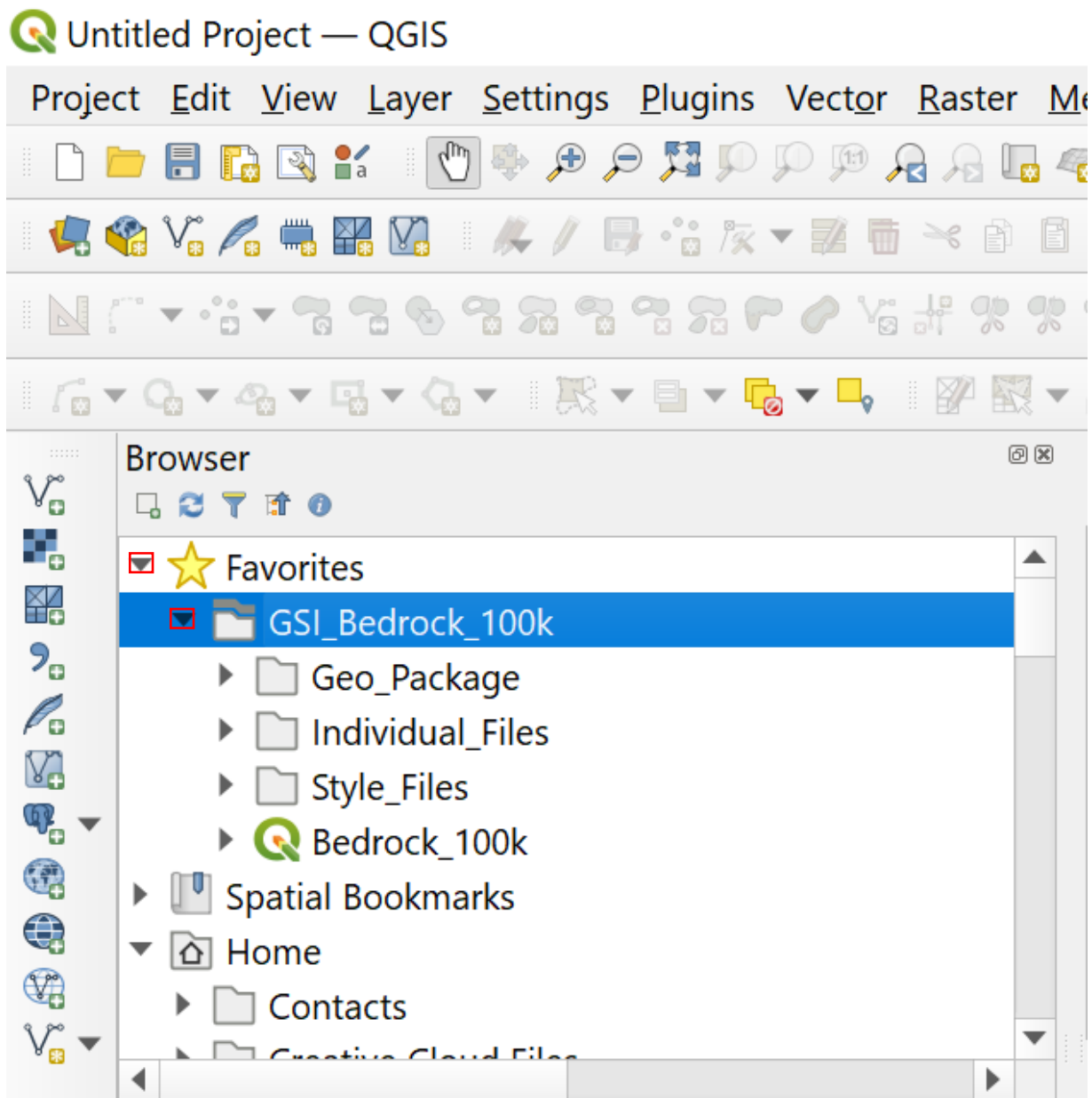


Figure 29. The folder “GSI_Bedrock_100k” should now be located under Favorites.



3.2 Adding a Geo Map Package

1. In the browser panel, click the arrows to the left of where your folder “GSI_Bedrock_100k” is located (1). Click “Geo_Package” (2) then click “Bedrock_100K.gpkg” (3). Keep clicking these arrows until you see a green Q symbol file called “Bedrock_100k “. Double click “100K_Geopackage” (4). See Figure 31.

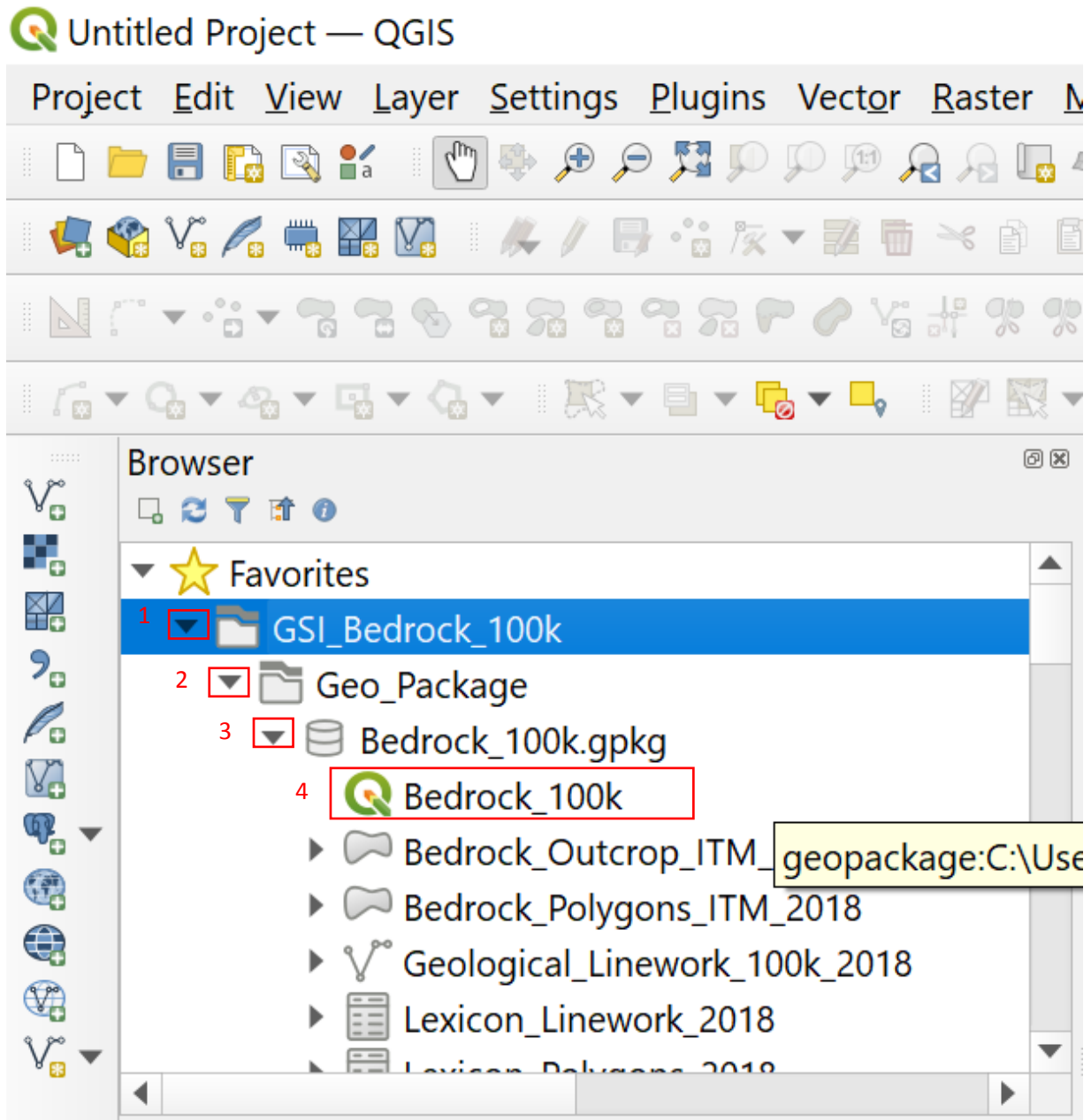


Figure 30. Navigate to the file “100K_Geopackage” then double click on the file.



2. The project should open in the map canvas. All of the files should be correctly styled and classified automatically. See *Figure 32*.

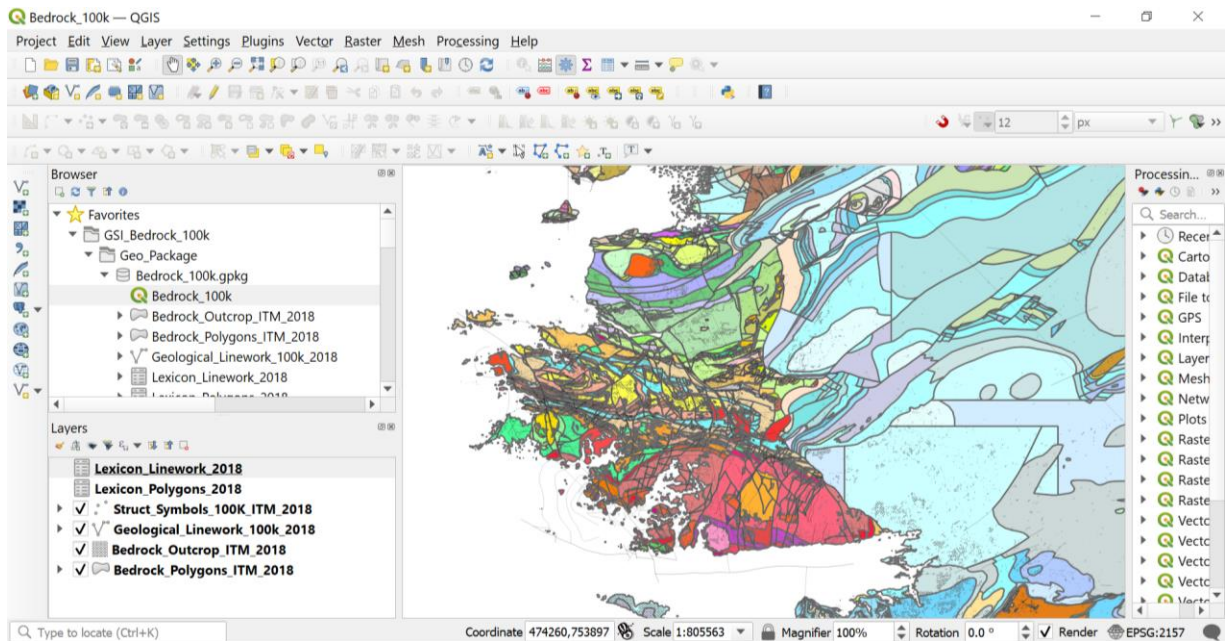


Figure 31. All of the layers should now be added.



3. If you can't open the file, you can right click the file "100K_Geopackage" (1) and click "Open Project" (2). See Figure 33.

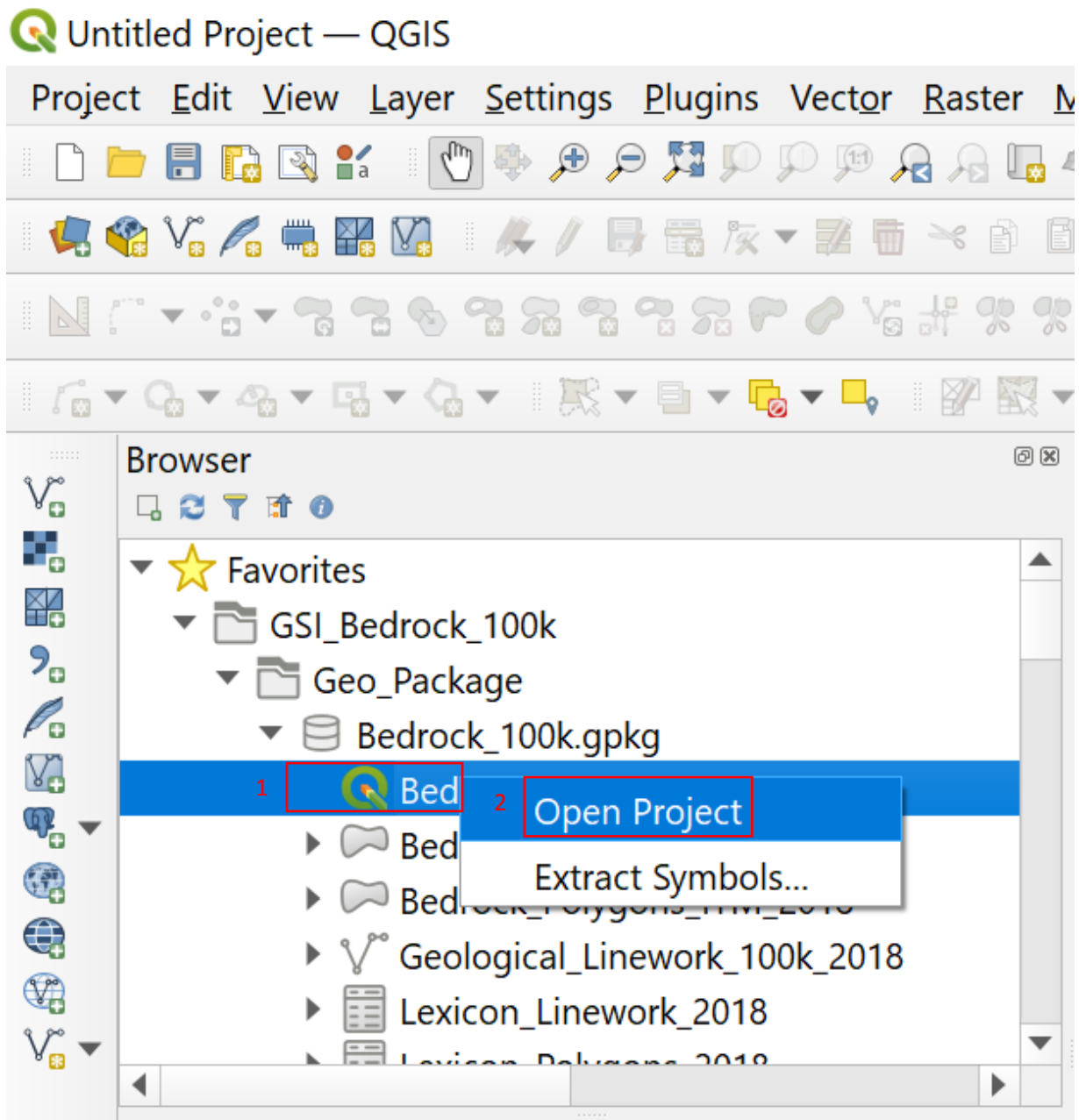


Figure 32. If you can't open the GeoPackage you can right click on the file then click "Open Project".



3.3 Adding a Vector Layer

If you are unable to open the Geo Map package. You can add the layers individually. The easiest way to add layers is to left click on the file, hold and drag the selected file from the browser panel and drop into the main map canvas. (Please see this video <https://youtu.be/YeUFtdnK4q4>). Or you can right click the file “Bedrock_Polygons_ITM_2018.shp (1) then click Add Layer to Project (2). See Figure 34.

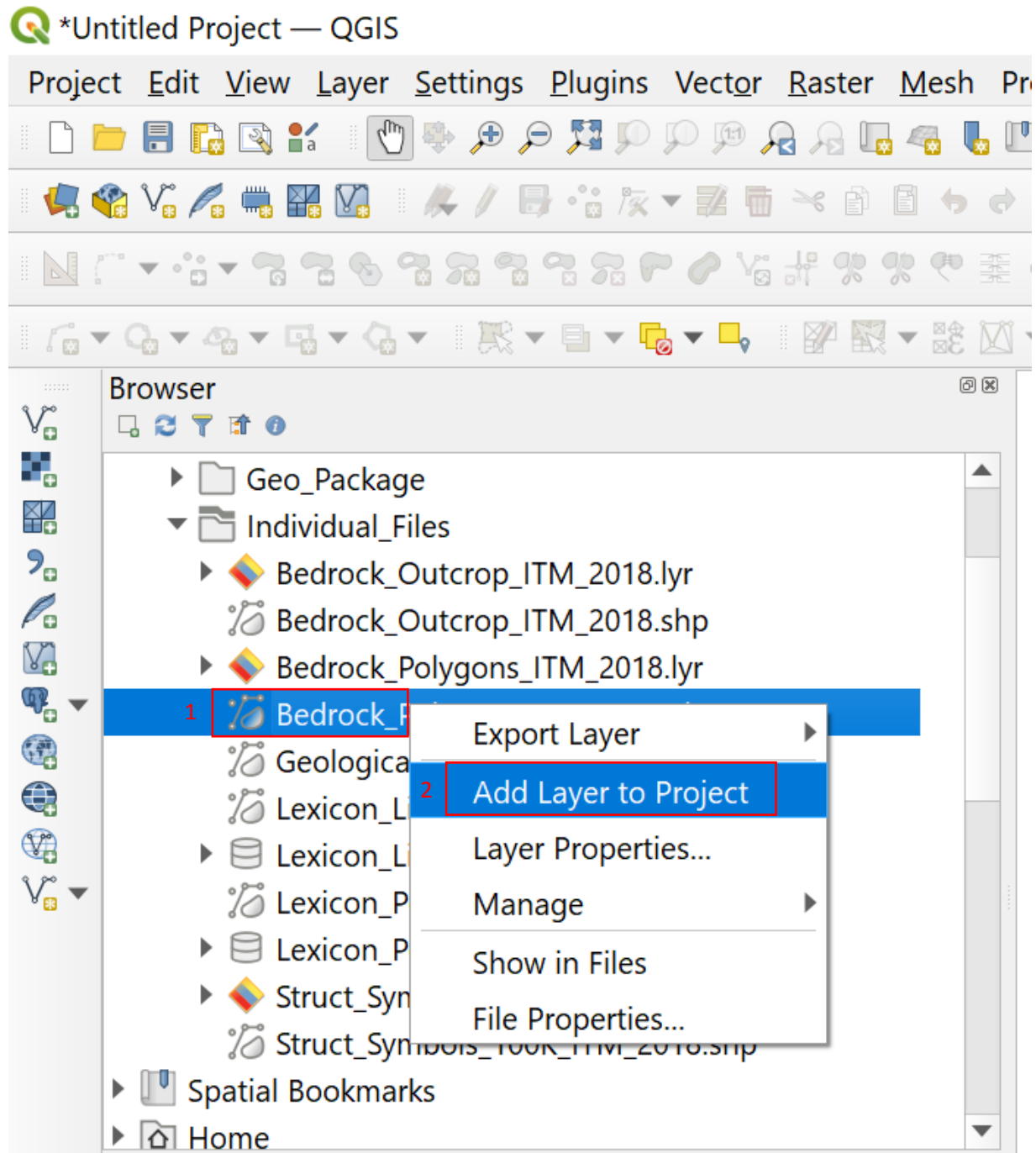


Figure 33. Highlight the Bedrock_Polygons_ITM_2018.SHP file. Right click on the shape file and click "Add Layer to Project".



1. Add in the shapefiles: Bedrock_Outcrop_ITM_2018.shp, Bedrock_Outcrop_ITM_2018.shp, Geological_Linework_100K_2018.shp, Structural_Symbols_100K_ITM_2018.shp, Lexicon_Linework_2018.dbf and Geological_Linework_2018.dbf. Add the files in this order as this is the correct layer rendering. Layers will block each other depending on ordering. See section 3.4 below on how to relate lexicon layers.
2. To save your project in the Toolbar, click “Project” (1), “Save As” (2). Now go to where your file folder is located at on your computer and type the File name you would like to save it as and in Save as type: click QGIS files .qgs. See *Figure 35*.

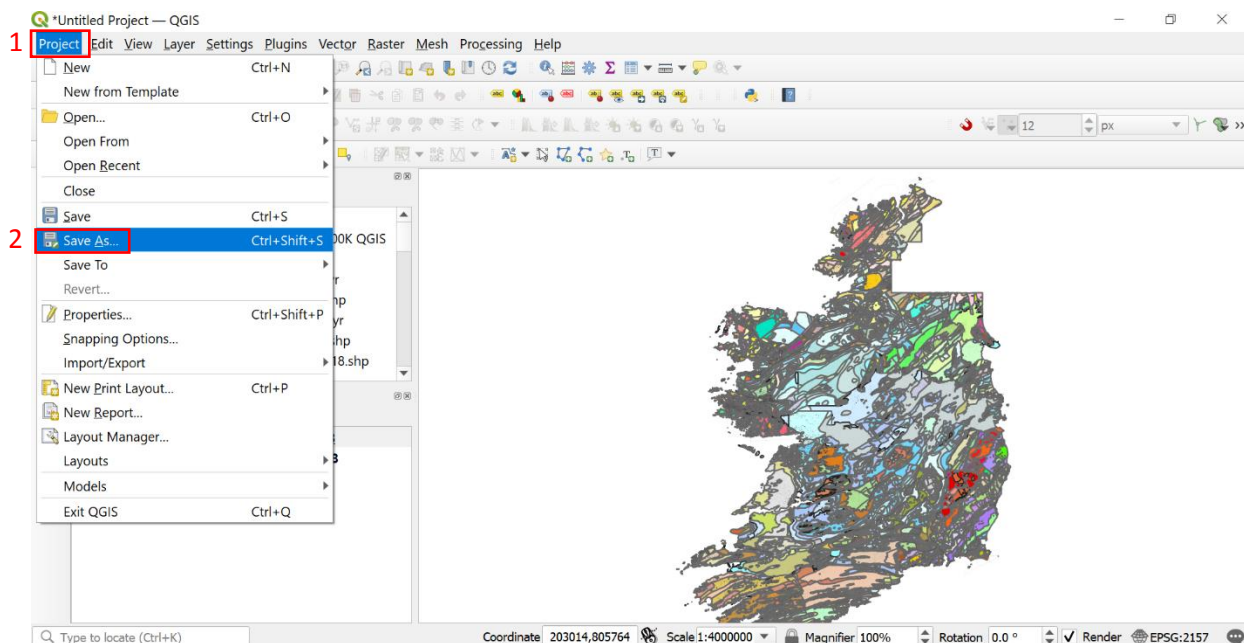


Figure 34. Saving the Project.



3.4 Relating Lexicons

1. In the Browser Panel, add in the files `Lexicon_Polygons_2018.dbf` and `Lexicon_Linework_2018.dbf` using the same method as adding a Vector Layer. See *Figure 36*.

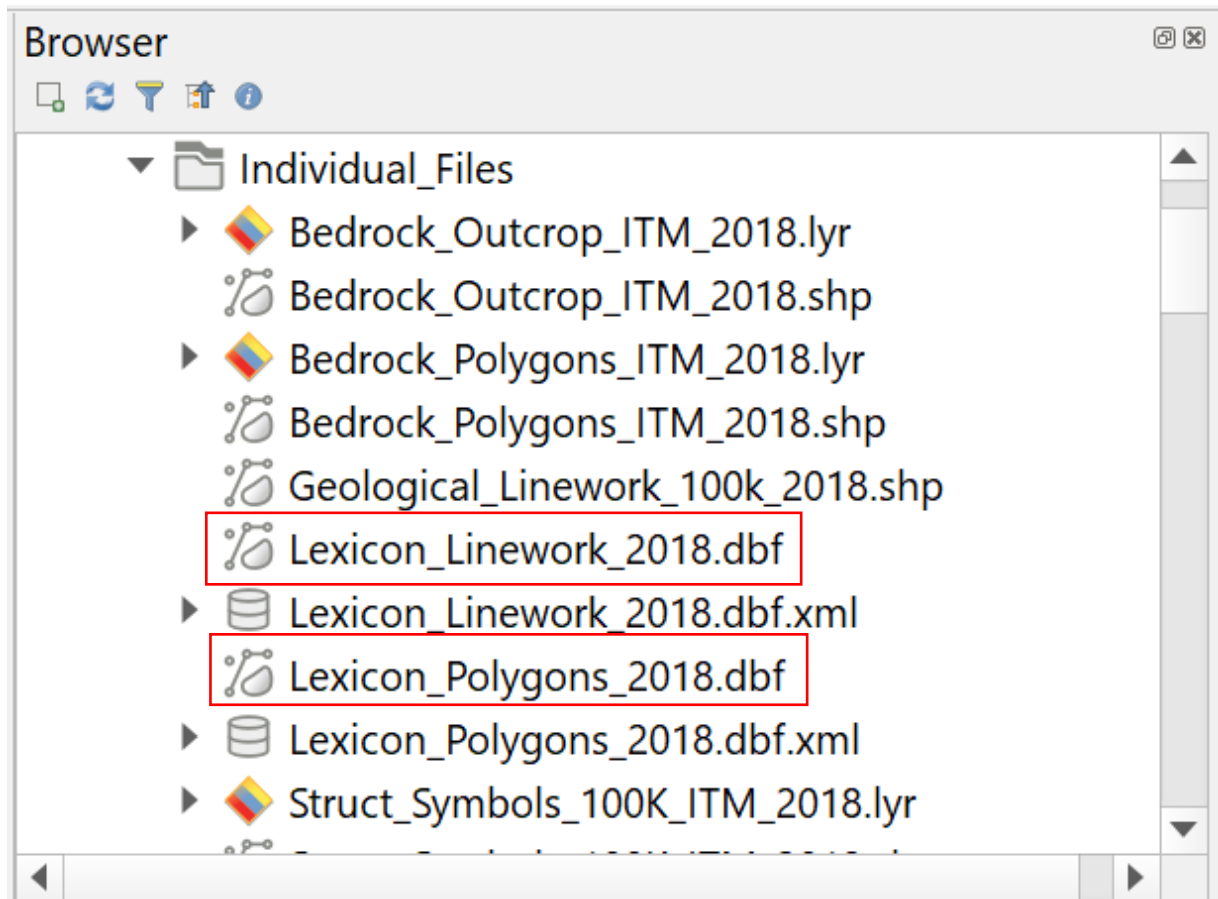


Figure 35. The lexicon files.



2. You should now see the files added to the layers panel. In the Menu Bar click “Project” (1) then “Properties” (2). See *Figure 37*.

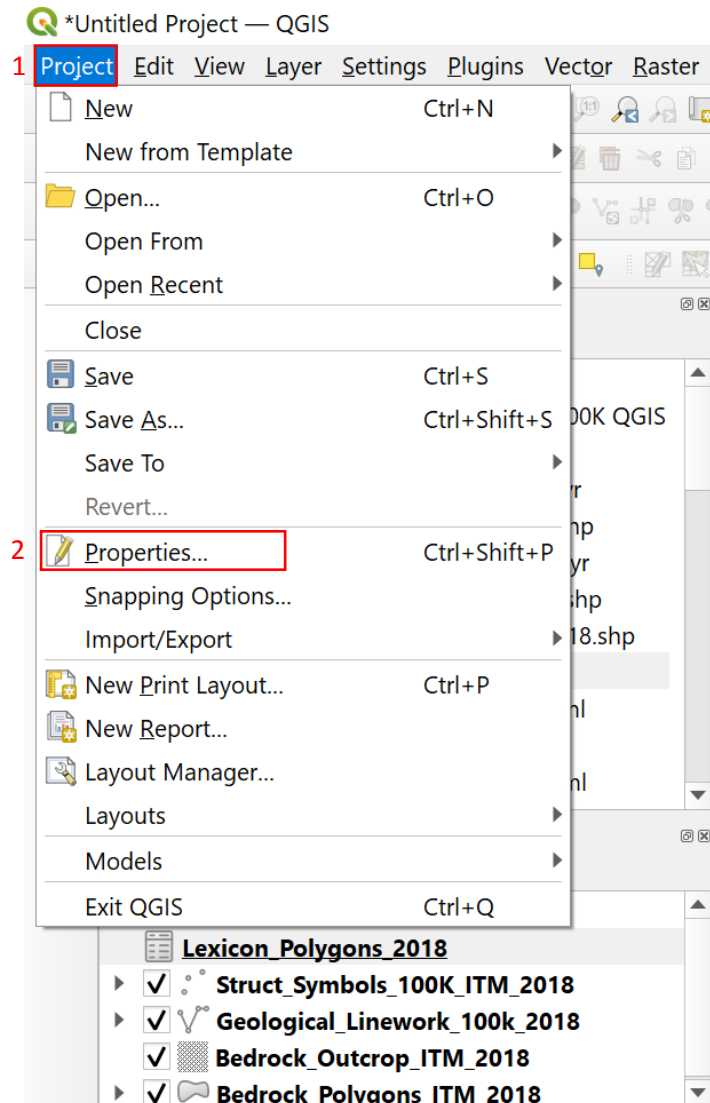


Figure 36. Click “Project” then “Properties”.



3. Click “Relations” (1), located in the left-hand panel. Then click “Add Relation” (2). The Add New Relation window should appear. See Figure 38.

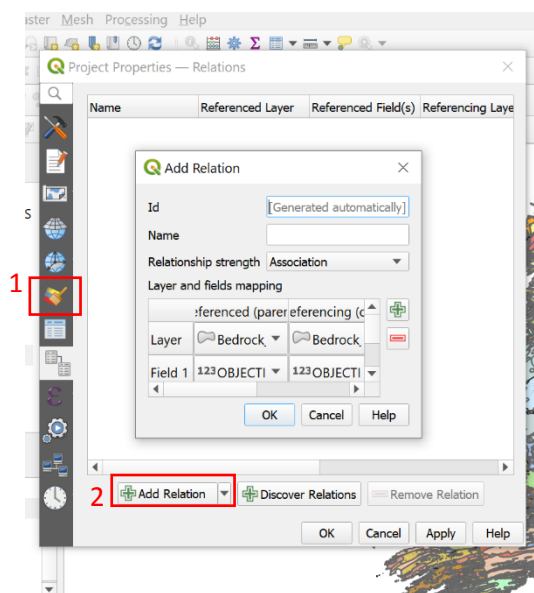


Figure 37. Click “Relations” then “Add Relation”.



4. In the I.D AND Name boxes, type Lexicon_Polygons (1 and 2). In Referenced layer (parent), click the right-hand arrow (3) to see a drop-down menu of different layers. Click the Bedrock_Polygons layer, and in Referencing Layer (child) click the right-hand arrow (4) and Lexicon_Polygons layer. In Field 1, Click New Code for both layers from their drop-down menus (5 and 6). Then click “Ok” (7). See *Figure 39*.

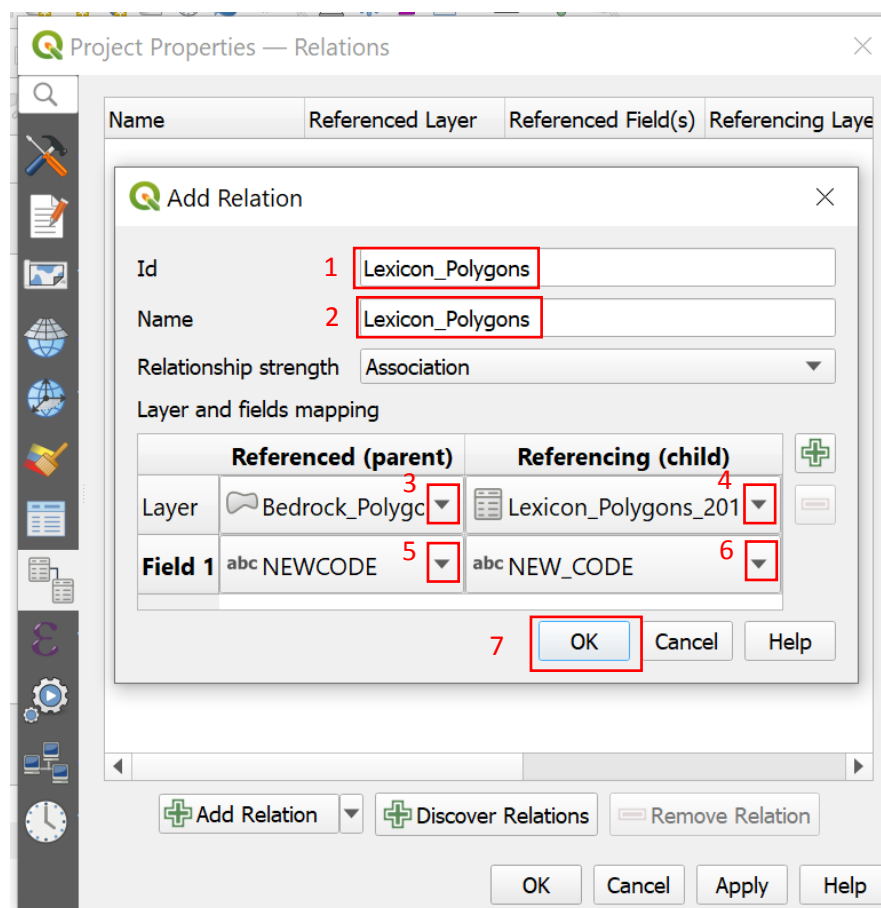


Figure 38. How to add a Polygon relation.



5. You will now see the relation has been added. See *Figure 40*.

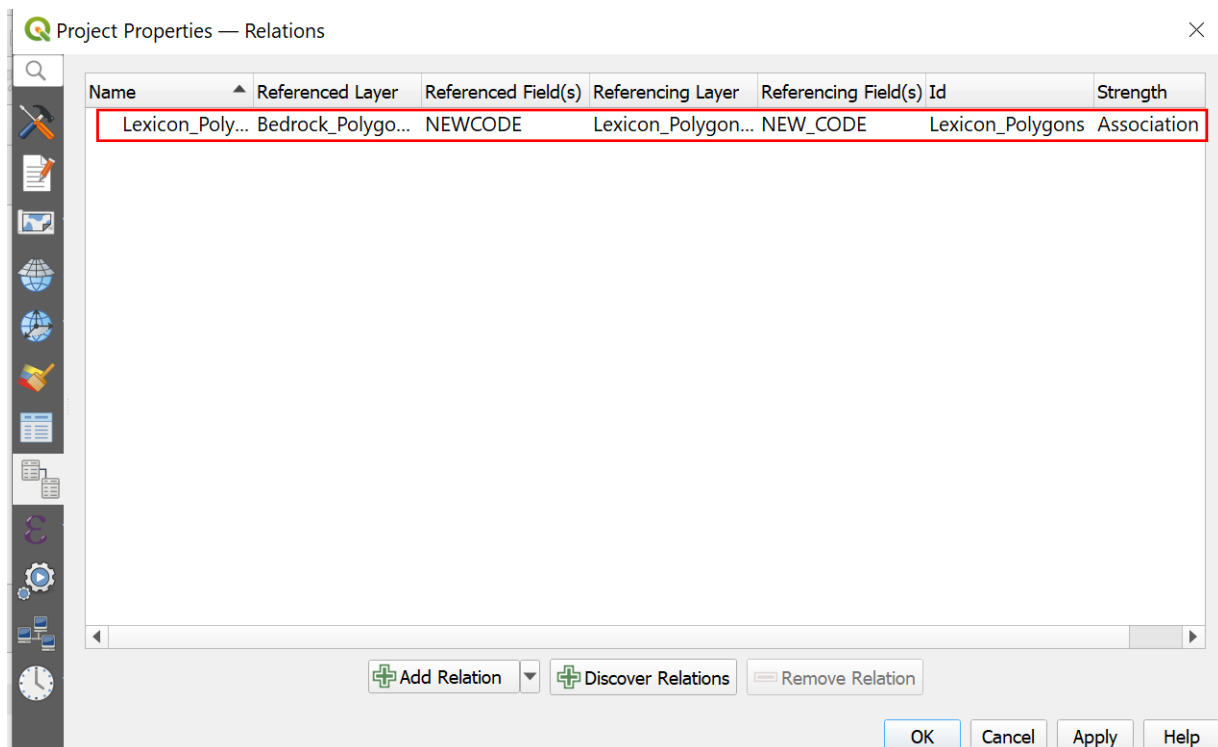


Figure 39. The *Lexicon_Polygons* relation has been added.



6. To add the Lexicon_Linework repeat the same steps as above for the Lexicon_Polygons. Click “Add Relation”. In I.D AND Name boxes type in Lexicon_Linework (1 and 2). In Referenced layer (parent) click the right-hand arrow (3) to see a drop-down menu of different layers click the Geological_Linework layer and in Referencing Layer (child) click the right-hand arrow (4) and Lexicon_Linework layer. In Field 1, click New Code for both layers from their drop-down menus (5 and 6). Then click “Ok” (7). See *Figure 41*.

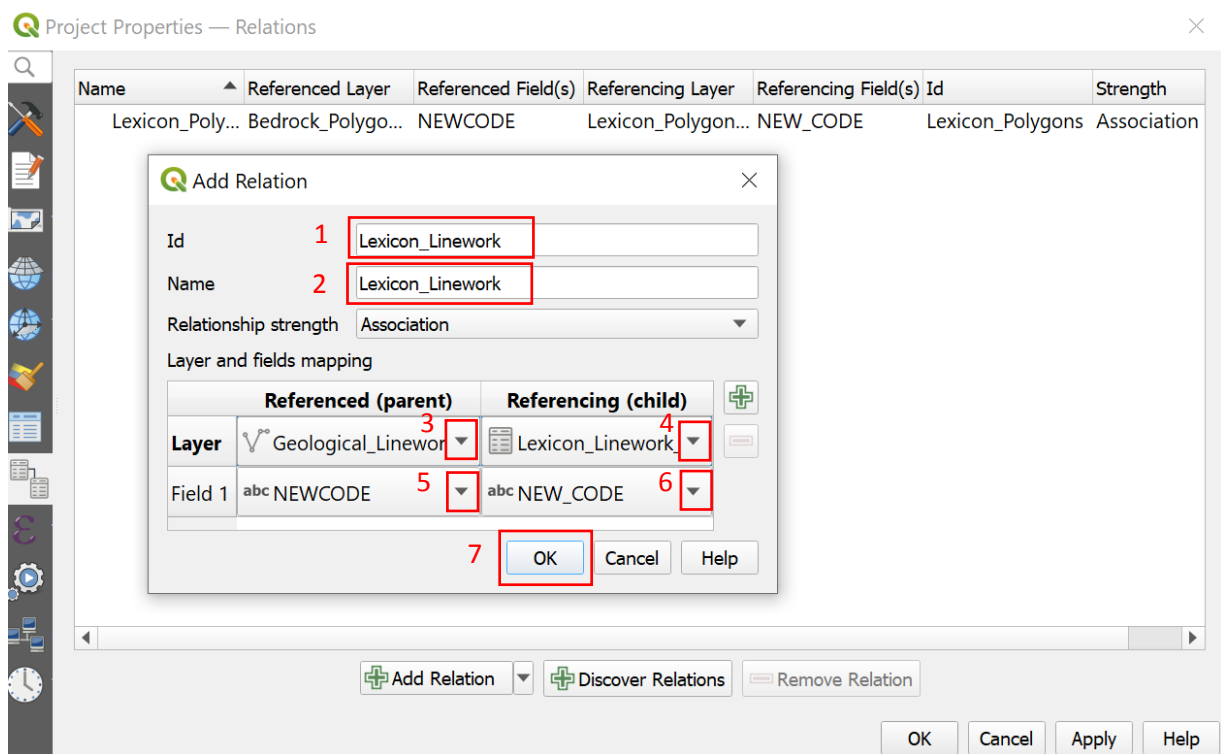


Figure 40. How to add a Linework relation.



7. Two relations should now appear (1). Click “Ok” (1) and “Apply” (2). See *Figure 42*.

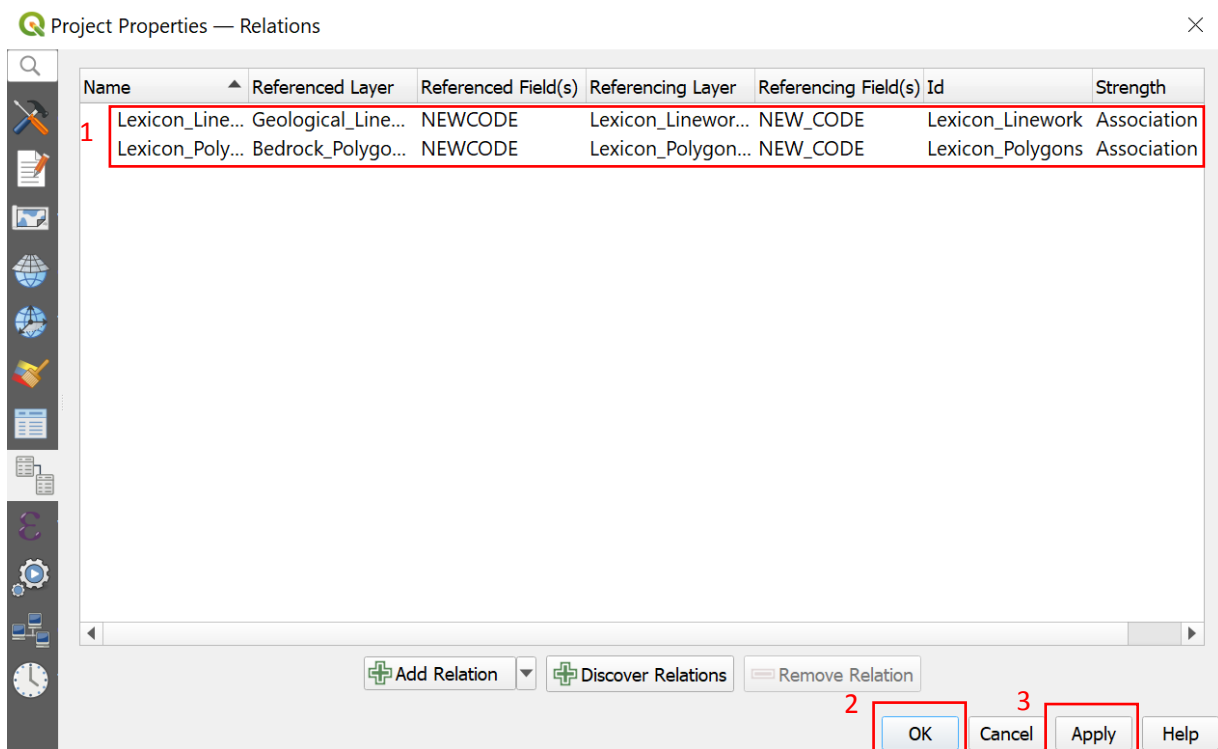


Figure 41. Both Lexicons should appear, then Click “Ok” and “Apply”.

8. In the Layers Panel, click the *Bedrock_Polygons_ITM_2018* layer, it should highlight in a blue colour (1). In the top Toolbar, click on the Identify Features (I symbol with a mouse beside it) (2). See *Figure 43*.

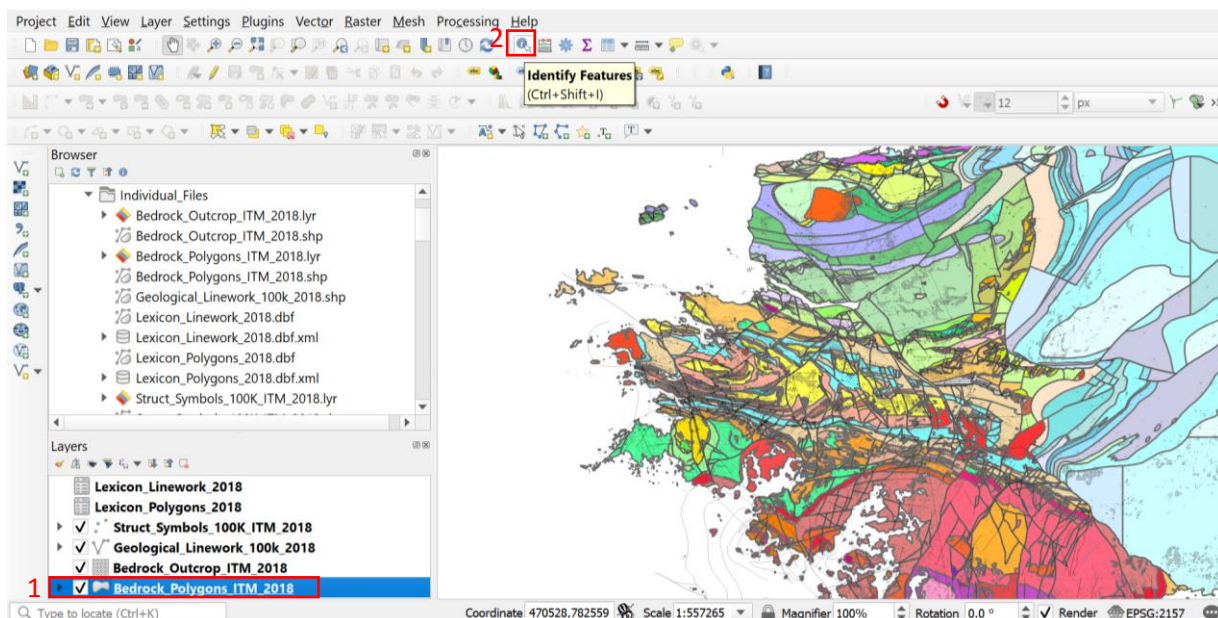


Figure 42. Click on the *Bedrock_Polygons_ITM_2018* layer then click “Identify Features”.



9. Your mouse should now appear with an "I" to the right of the arrow. Zoom in and click on any Bedrock Polygon. This polygon will then be highlighted in red (1). An Identify Results table should now appear. Scroll down and left click on the drop-down arrow located beside *Lexicon* and *Lith* (2 and 3). You can make the table larger and easier to read by hovering your mouse over the edges of the box and clicking to extend. To close the table, you can click the red X located in the top right-hand corner. See *Figure 44*.

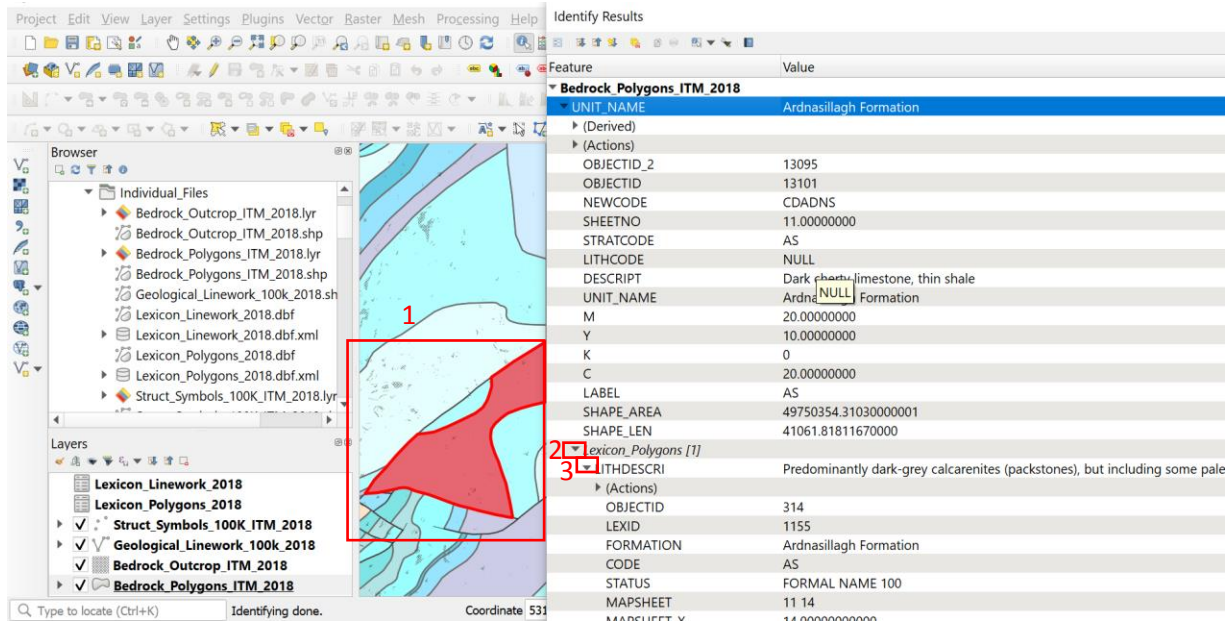


Figure 43. Accessing the Lexicon data.

10. Repeat the above steps this time highlighting the Geological_Linework_100K_2018 layer and clicking on a specific linework line like a fault or syncline.
11. To turn off the Identify Feature in the Toolbar click the Pan Map symbol (A white hand). You then should be able to freely move around the map canvas again. See *Figure 45*.

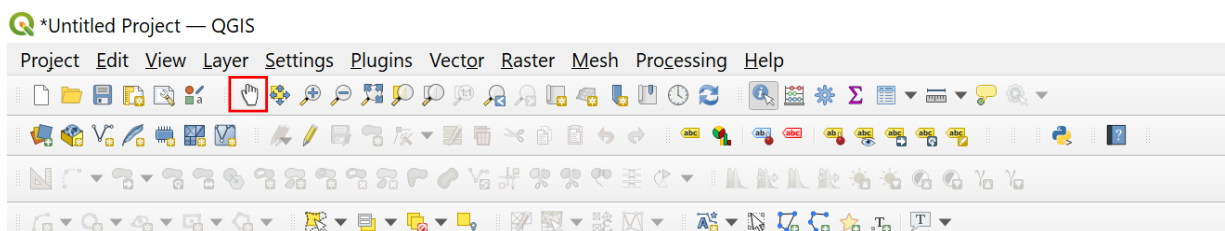


Figure 44. Click the "Pan Map Symbol" to turn off the Identify Feature tool.

12. You can save this Project.

END

