



QGIS

Importing Existing Shapefiles vs. Creating New Shapefiles (02.13)

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ABOUT QGIS

QGIS is a free and open source Geographic Information System (GIS), or geodatabase, licensed under the GNU General Public License. QGIS runs on Linux, Unix, Mac OSX, Windows and Android and supports numerous vector, raster, and database formats and functionalities. QGIS users can view, edit, and analyze spatial and locational information through its free software toolkit.

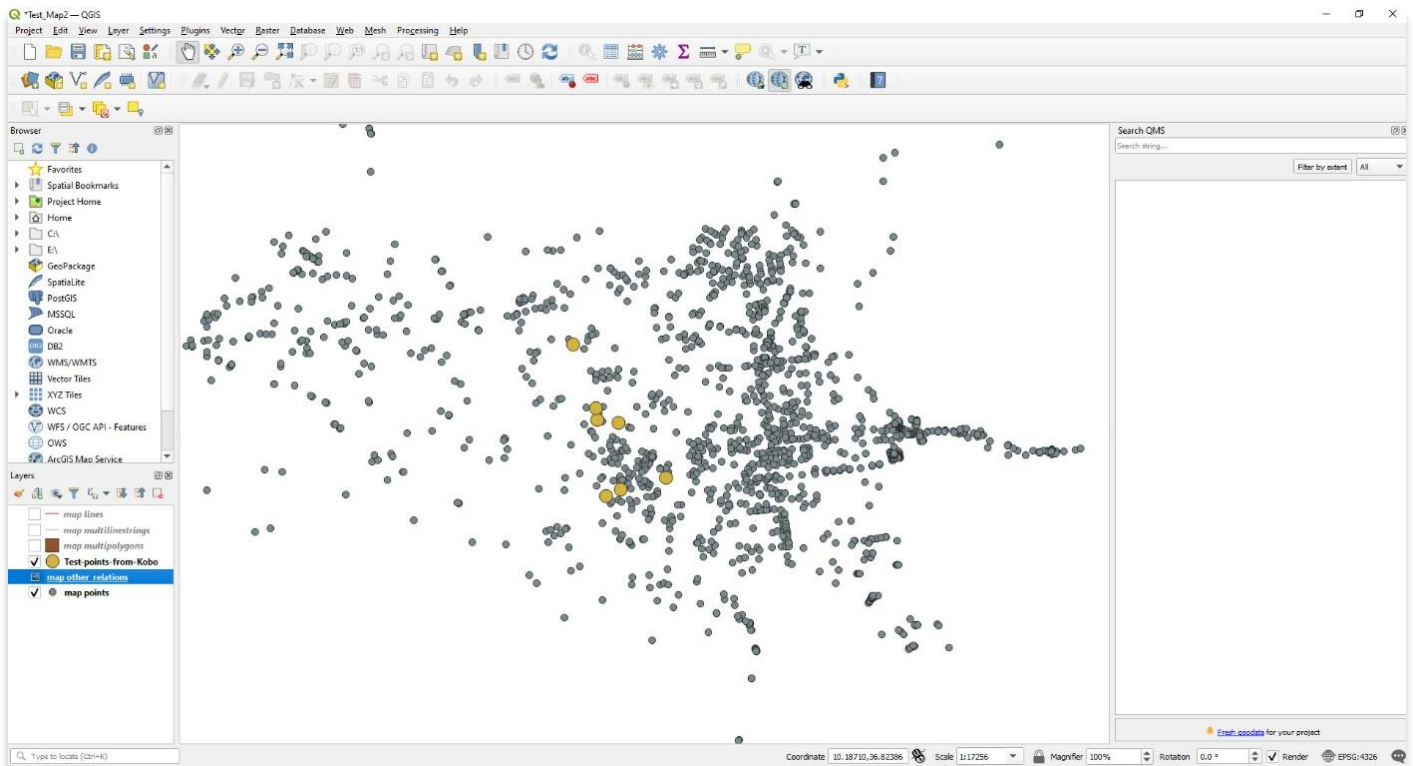
Download QGIS here: <https://qgis.org/>

Documentation: <https://docs.qgis.org/3.16/en/docs/index.html>

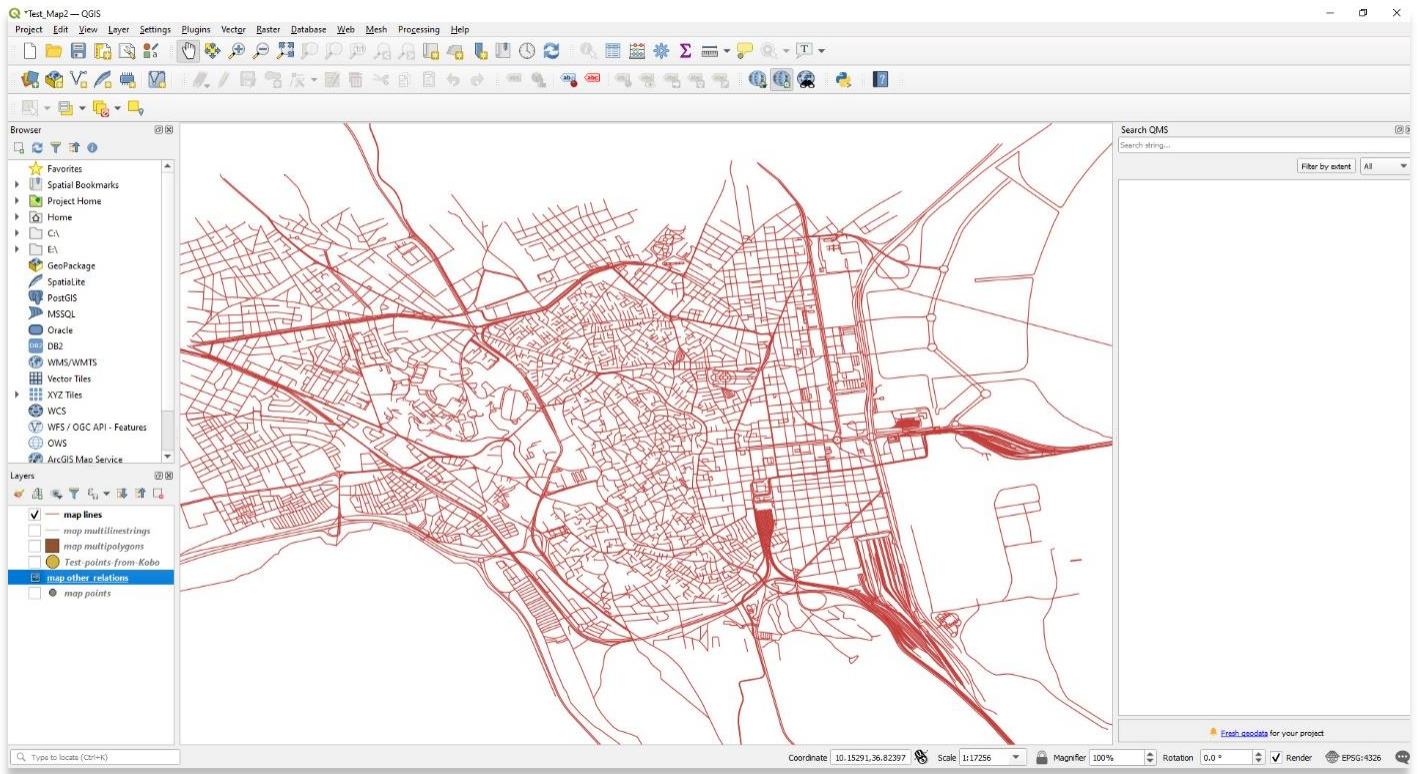
This **ASOR Tutorial (02.13)** will provide an overview about the differences between importing existing shapefile data and creating new shapefiles within QGIS.

TYPES OF SHAPEFILES

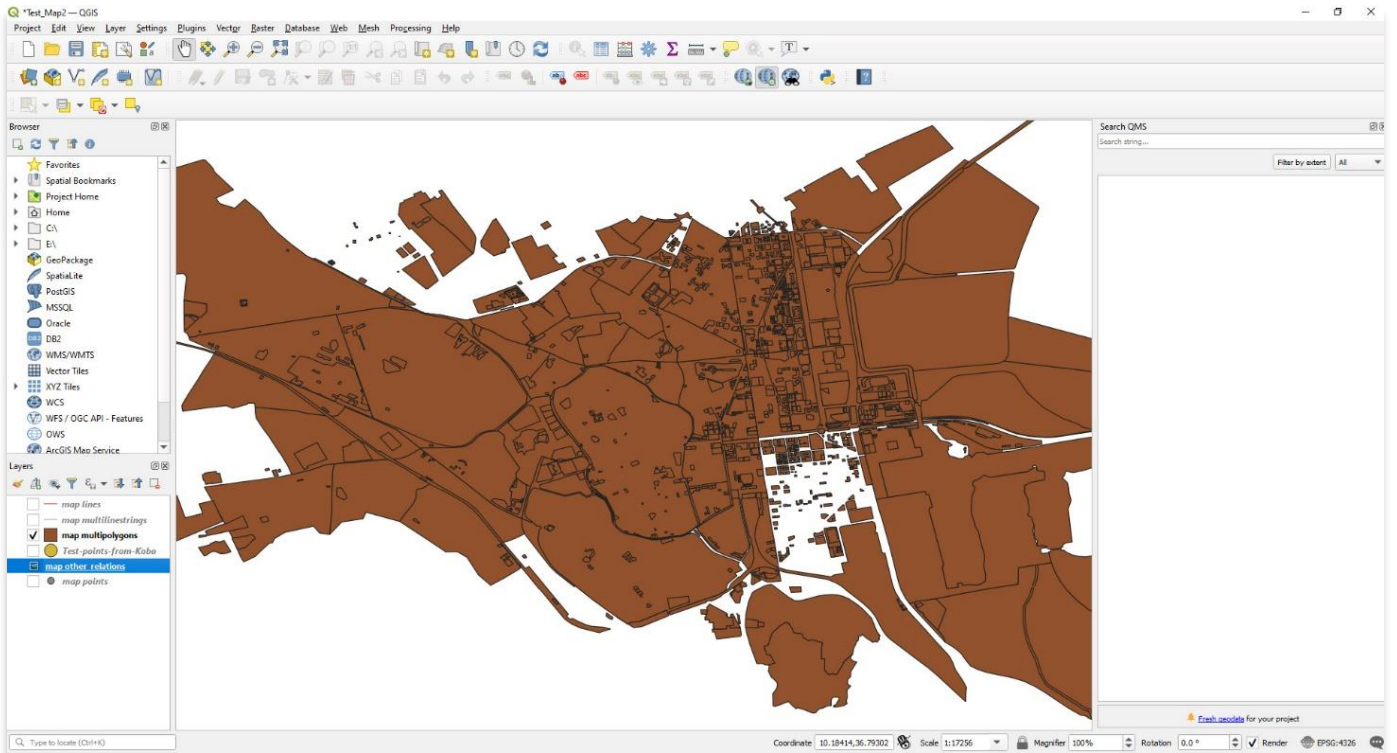
1. Shapefiles are vector-based data, which can be incorporated into a GIS project in three ways: (1) points, (2) lines, and (3) polygons:
 - a. **Point Data** — Points described by x,y coordinates (lat, long; easting, northing)



b. **Line/Polyline Data** — Line data have x,y points and lines between points.

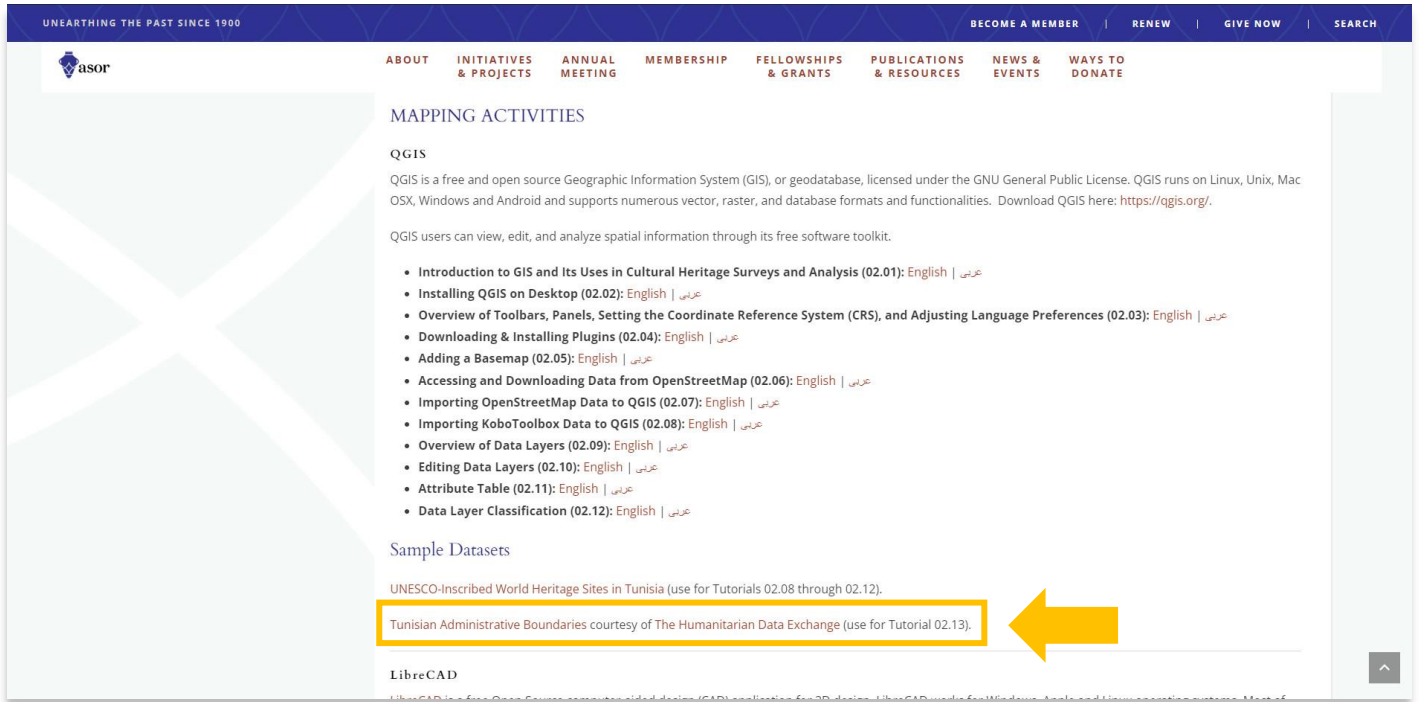


c. **Polygon Data** — Connected line segments enclosing areas

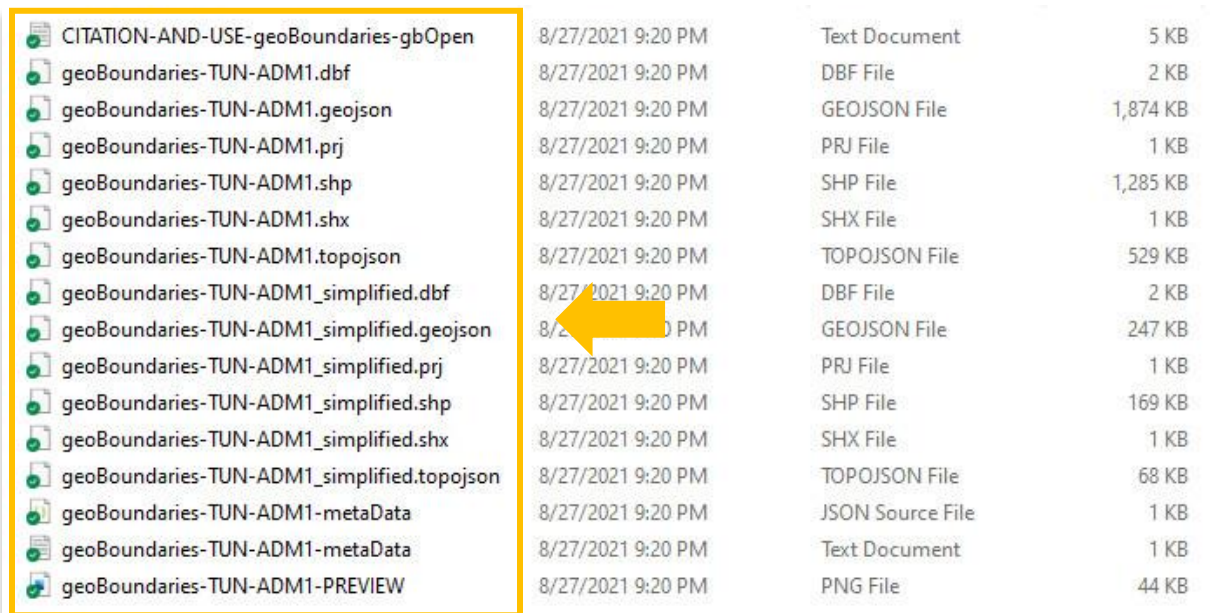


IMPORTING EXISTING SHAPEFILES

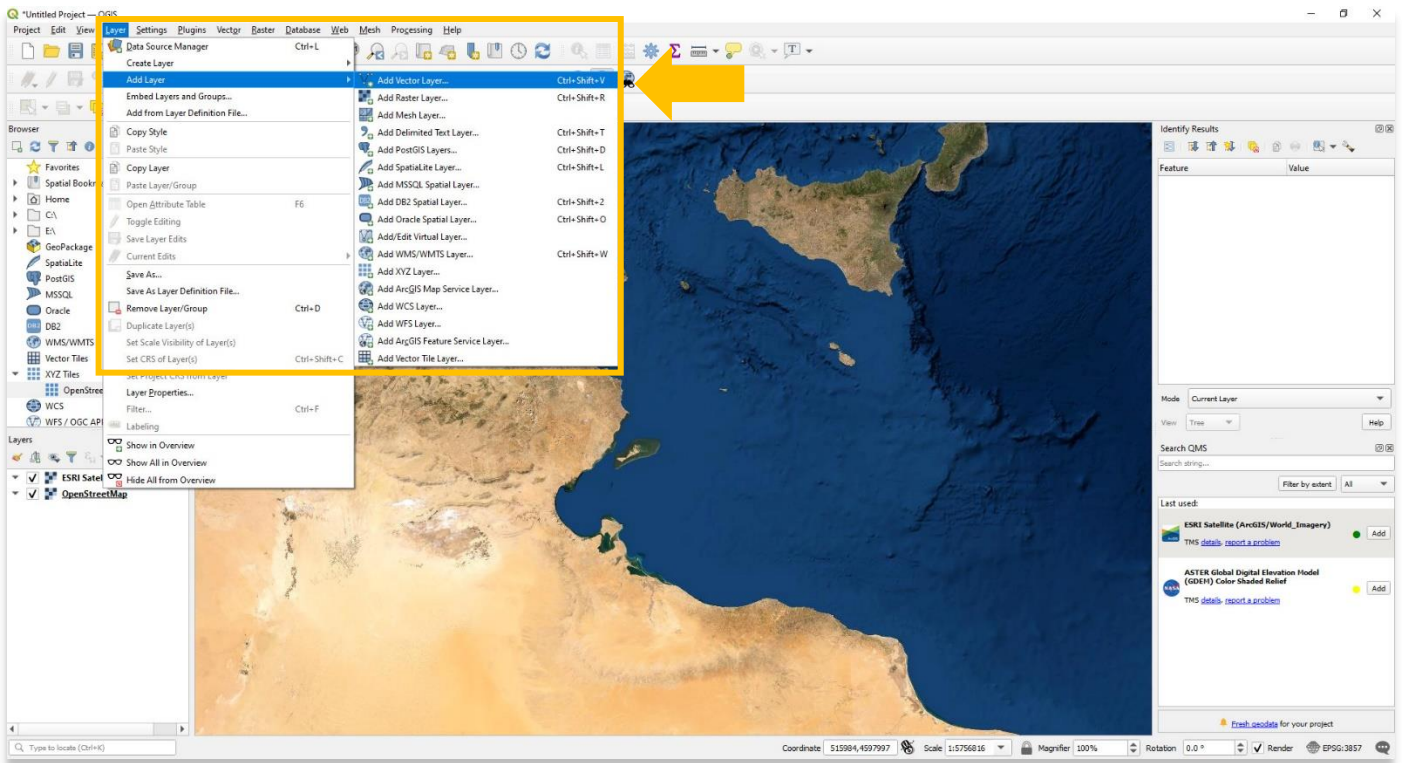
- 2. Download the **Tunisian Administrative Boundaries** shapefile from ASOR’s tutorial webpage: <https://www.asor.org/chi/chi-tutorials>.



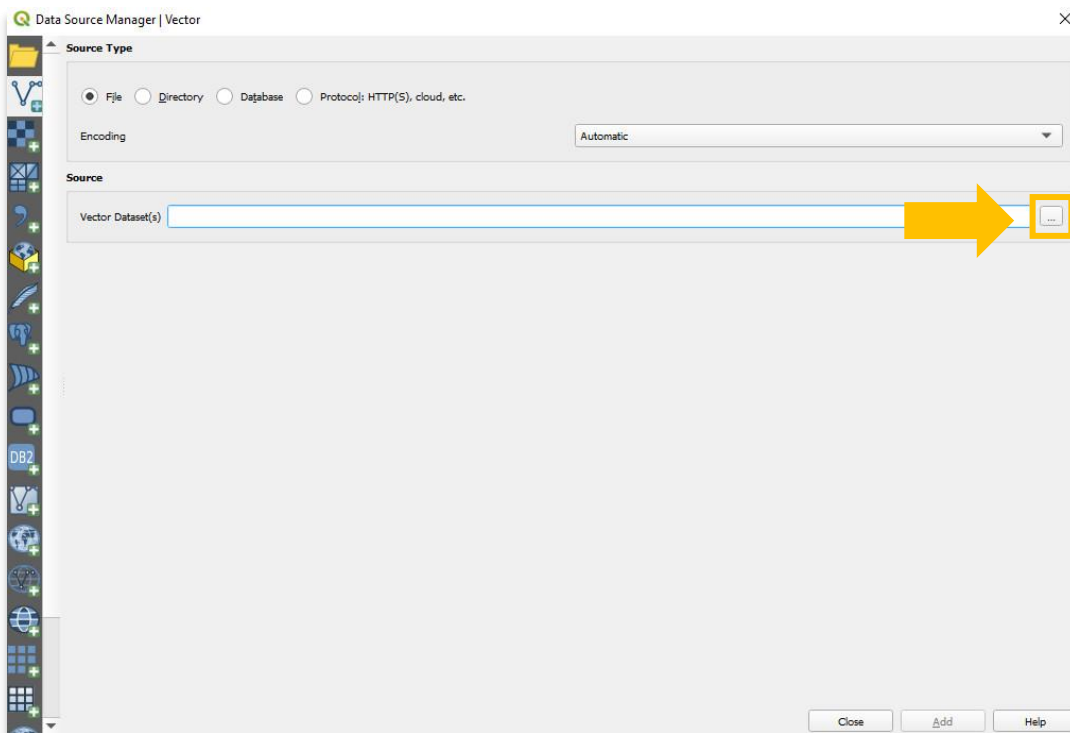
- 3. Unzip this file and move to your QGIS project folder on your computer. Please note that a shapefile in QGIS comprises of at least 3 separate files on your computer (often more). When moving a shapefile to a new folder on your computer, ensure that you move all associated files together, otherwise the shapefile may not render in QGIS.




4. Open your QGIS project from previous ASOR tutorials. Next add the **Tunisian Administrative Boundaries** shapefile by **Layer > Add Layer > Add Vector Layer**.



5. In the **Data Source Manager**, select the button with three dots to the right of **Vector Dataset(s)** to add the **Tunisian Administrative Boundaries** shapefile.

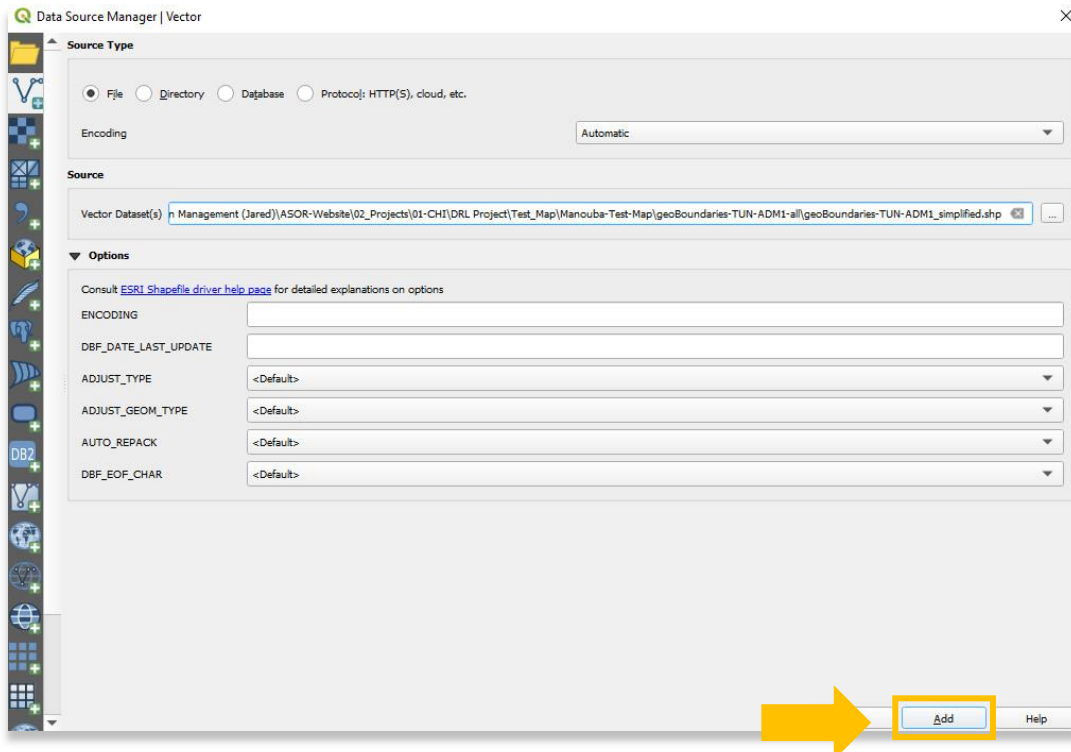


6. For this example, you only need to select the file ending in .shp (shown below). There are actually two shapefiles stored in the **Tunisian Administrative Boundaries** zip file downloaded from the ASOR website. Choose the “simplified” file for this tutorial.

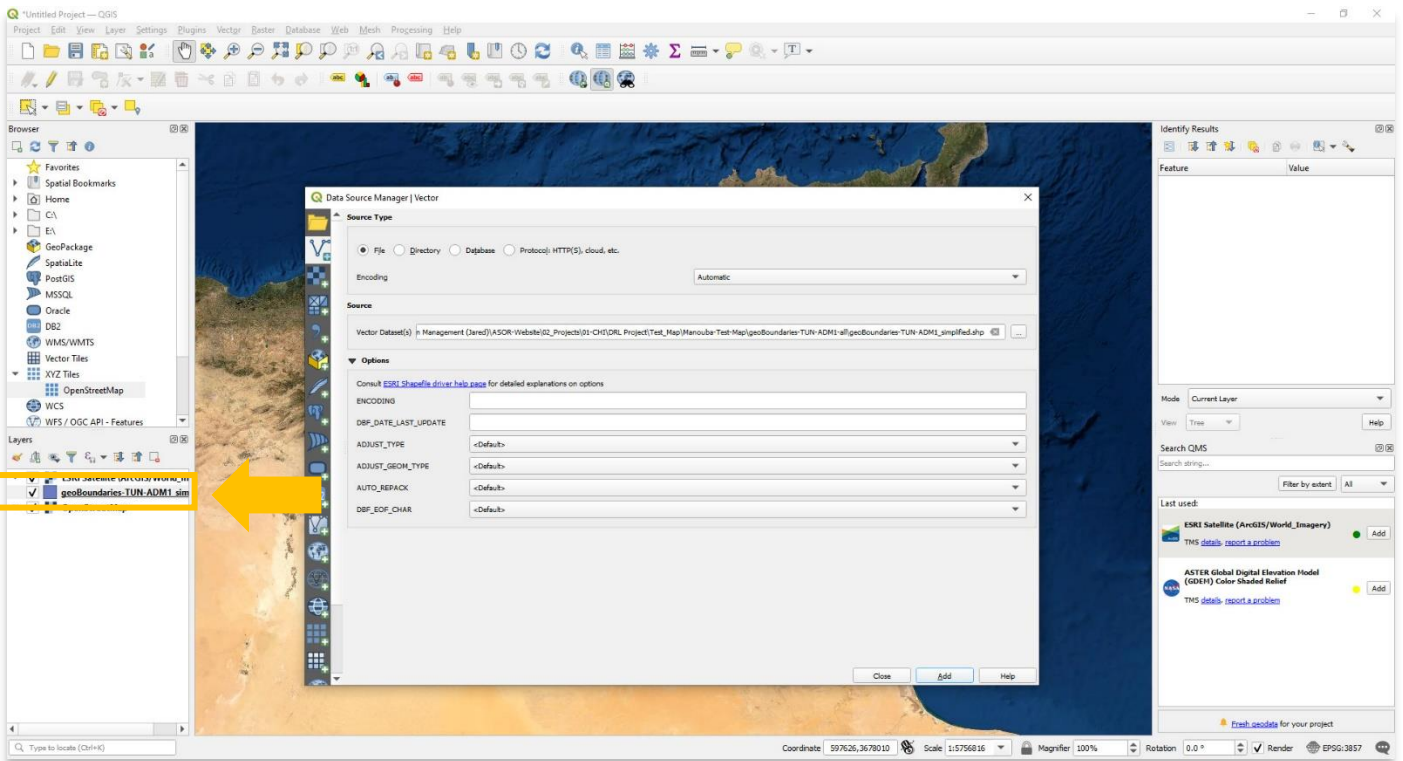


File Name	Date/Time	File Type	Size
CITATION-AND-USE-geoBoundaries-gbOpen	8/27/2021 9:20 PM	Text Document	5 KB
geoBoundaries-TUN-ADM1.dbf	8/27/2021 9:20 PM	DBF File	2 KB
geoBoundaries-TUN-ADM1.geojson	8/27/2021 9:20 PM	GEOJSON File	1,874 KB
geoBoundaries-TUN-ADM1.prj	8/27/2021 9:20 PM	PRJ File	1 KB
geoBoundaries-TUN-ADM1.shp	8/27/2021 9:20 PM	SHP File	1,285 KB
geoBoundaries-TUN-ADM1.shx	8/27/2021 9:20 PM	SHX File	1 KB
geoBoundaries-TUN-ADM1.topojson	8/27/2021 9:20 PM	TOPOJSON File	529 KB
geoBoundaries-TUN-ADM1_simplified.dbf	8/27/2021 9:20 PM	DBF File	2 KB
geoBoundaries-TUN-ADM1_simplified.geojson	8/27/2021 9:20 PM	GEOJSON File	247 KB
geoBoundaries-TUN-ADM1_simplified.prj	8/27/2021 9:20 PM	PRJ File	1 KB
geoBoundaries-TUN-ADM1_simplified.shp	8/27/2021 9:20 PM	SHP File	169 KB
geoBoundaries-TUN-ADM1_simplified.shx	8/27/2021 9:20 PM	SHX File	1 KB
geoBoundaries-TUN-ADM1_simplified.topojson	8/27/2021 9:20 PM	TOPOJSON File	68 KB
geoBoundaries-TUN-ADM1-metaData	8/27/2021 9:20 PM	JSON Source File	1 KB
geoBoundaries-TUN-ADM1-metaData	8/27/2021 9:20 PM	Text Document	1 KB
geoBoundaries-TUN-ADM1-PREVIEW	8/27/2021 9:20 PM	PNG File	44 KB

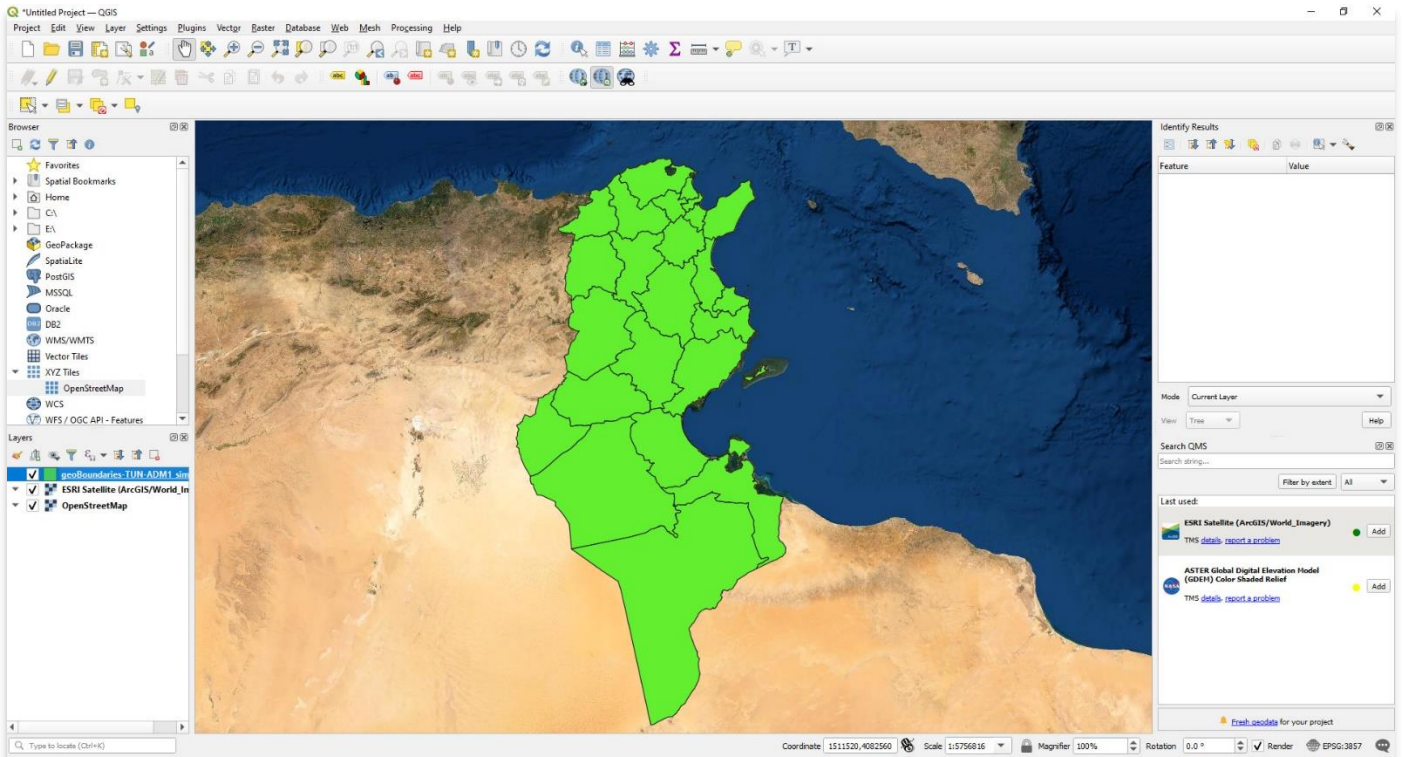
7. Select **Add** for the shapefile to display on your QGIS map viewer.



8. You will see the shapefile appear in the **Layers Panel**. The **Data Source Manager** will not close automatically. Select the **Close** button to view the new shapefile.



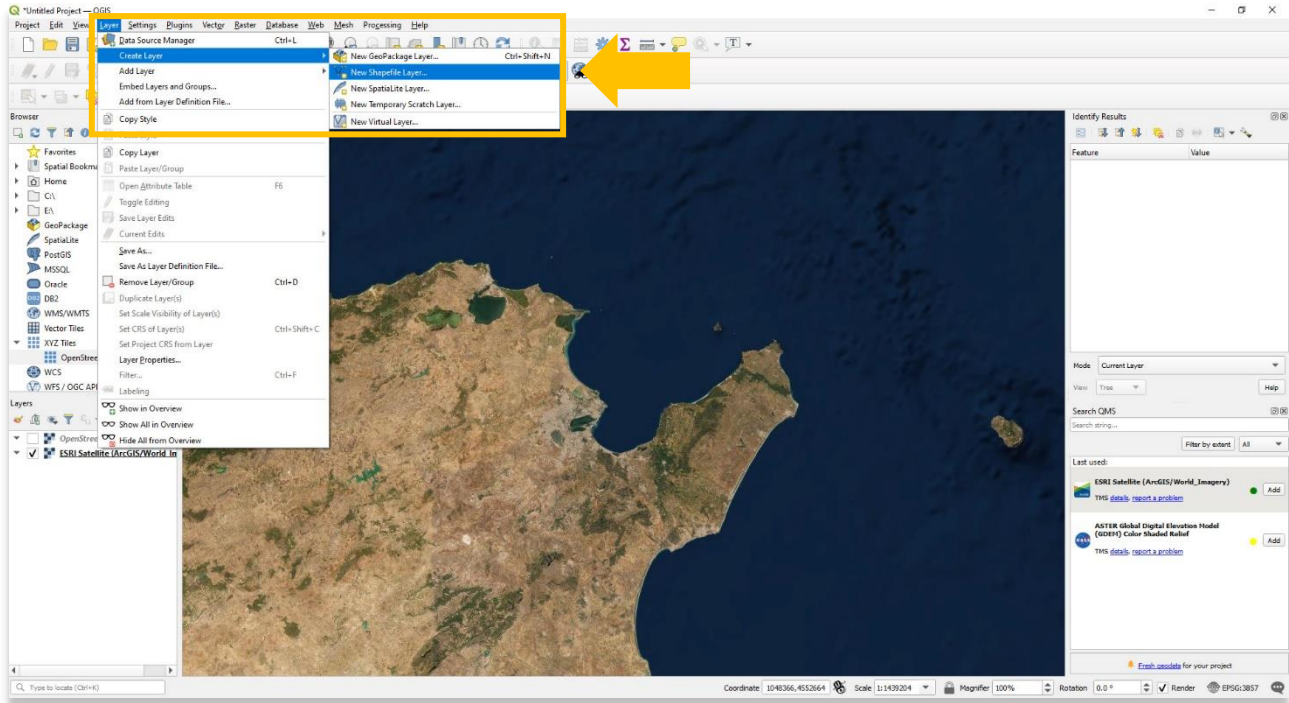
9. You may need to move up the **Tunisian Administrative Boundaries** shapefile in the **Layers Panel** so that it is visible. [ASOR Tutorial 02.10 \(Editing Data Layers\)](#) provides steps on how to change the symbology of layers.



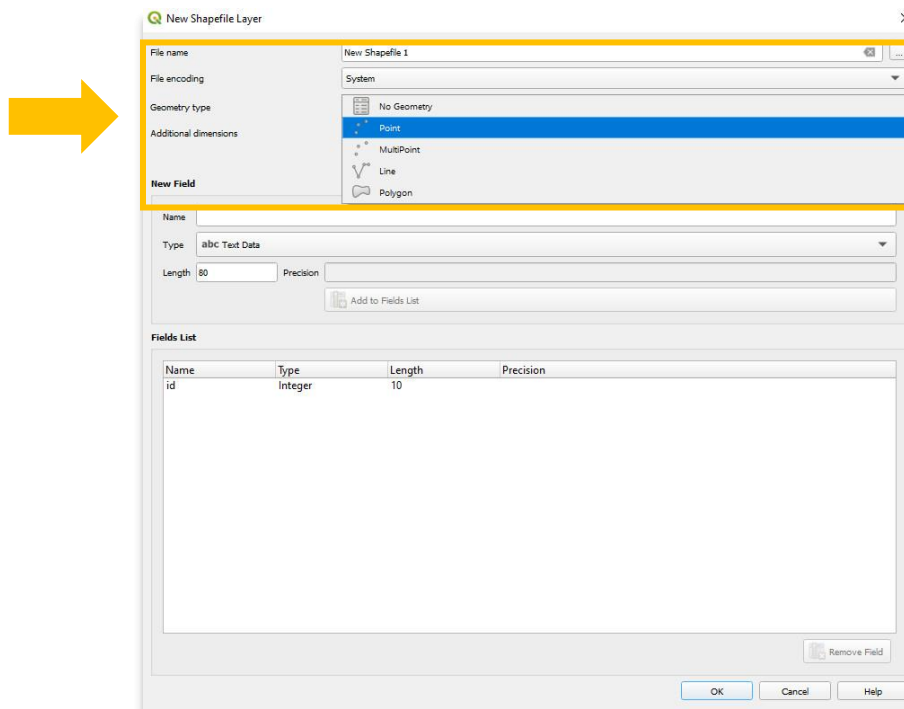
CREATING NEW SHAPEFILES

10. QGIS also allows users to draw points, lines, and polygons directly onto a basemap. This workflow is useful for planning survey areas in advance using satellite imagery.

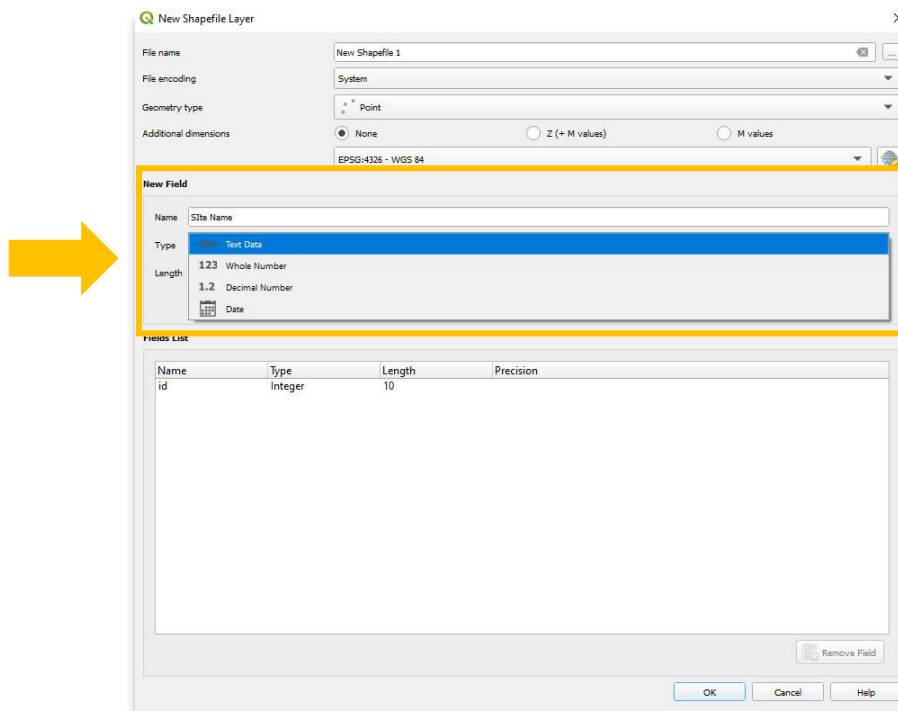
Open a new QGIS project and add a basemap. Next create a new shapefile by **Layer > Create Layer > New Shapefile Layer**.



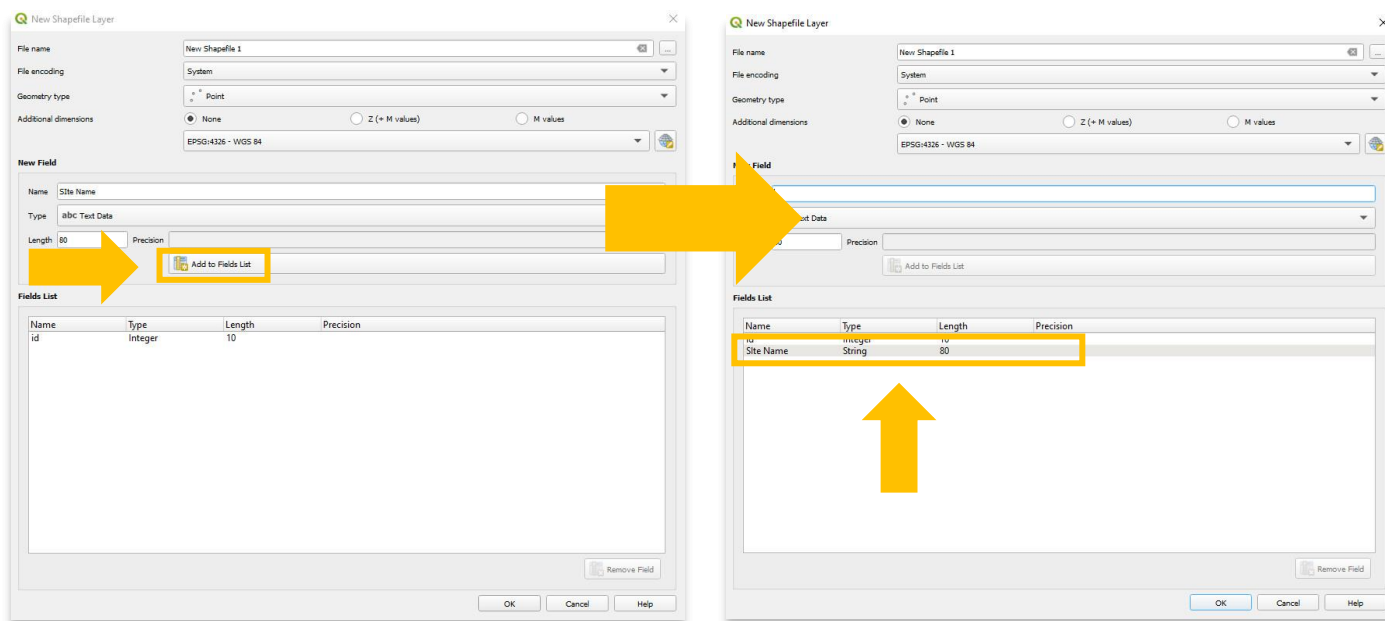
11. In the pop-up, type in a **File Name** and select the **Geometry Type** (point, line, polygon).



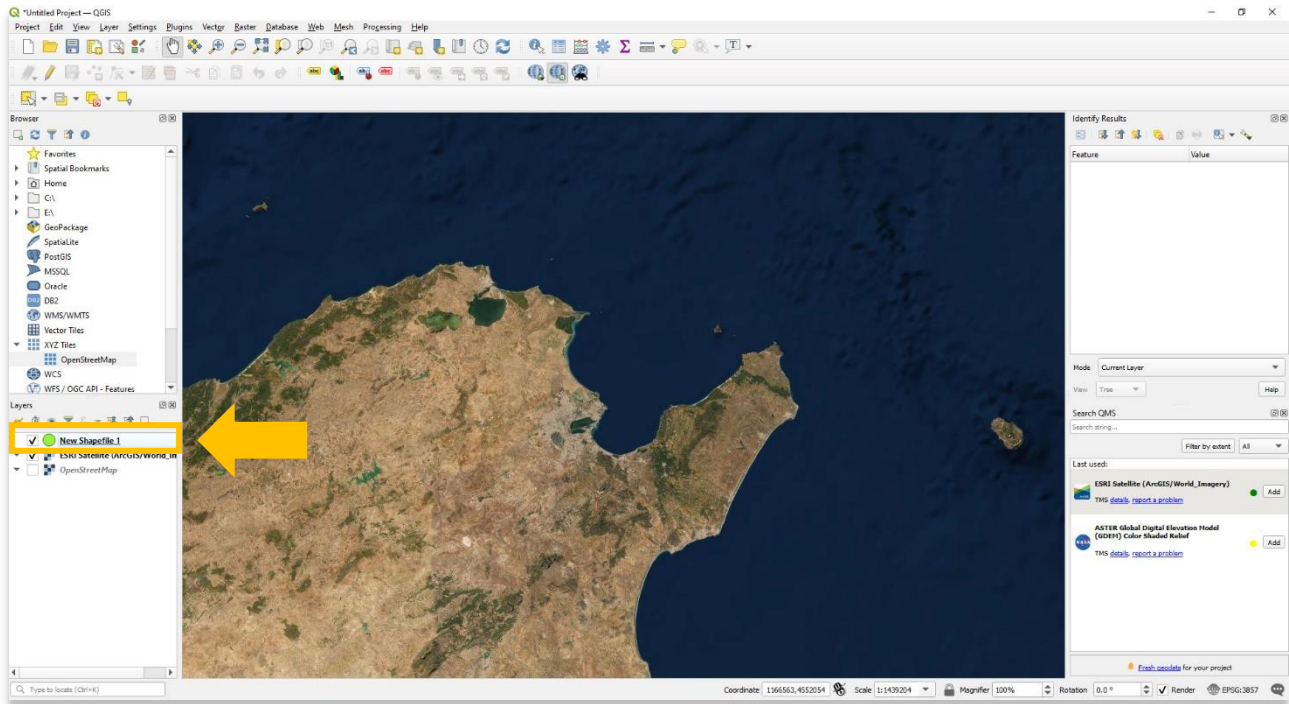
12. For this example, select **Point**. You can then add fields to this shapefile layer. These fields will become the columns in your new shapefile's attribute table. The **Value Types** (the descriptive data in the attribute table) are limited in form to **Text Data**, **Whole Number**, **Decimal Number**, and **Date**. Choose **Text Data**.



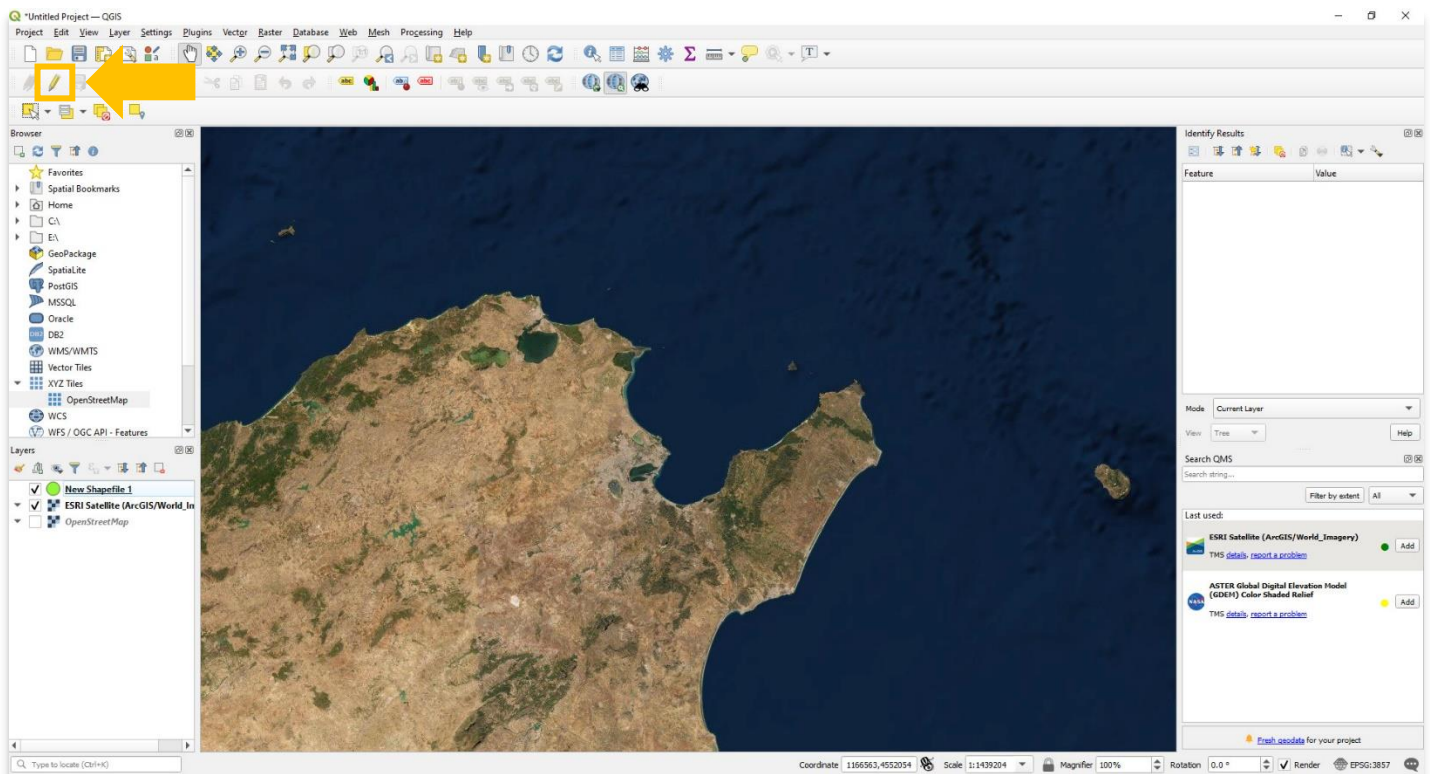
13. Select the **Add to Fields** Button. This new column will appear in the **Fields List** window below. You can add as many columns as you wish depending on the nature of your project.



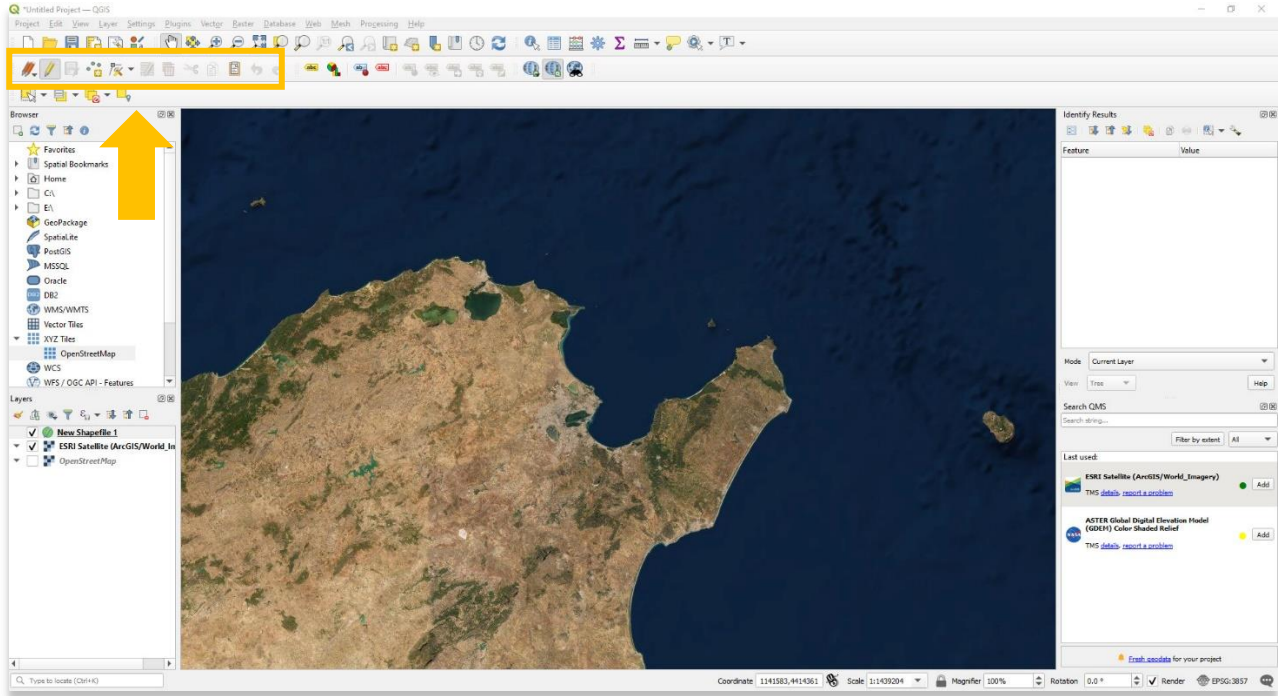
14. After adding all fields to your new shapefile, select **OK**. The new shapefile will now appear in the **Layers Panel**. No points will appear in the **Map Navigation** window until you draw them on your basemap.



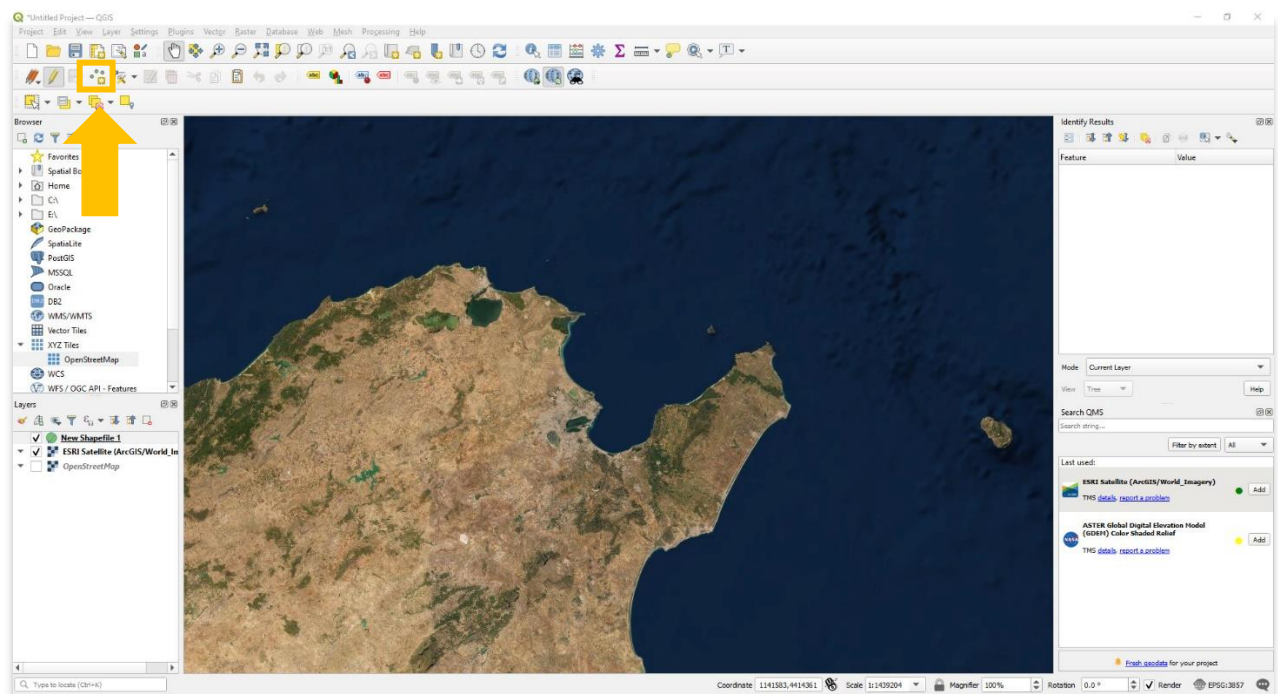
15. To draw a point on the map, select the **New Shapefile 1** layer in the **Layers Panel**, then the **Toggle Editing** button from the toolbars shown in the screenshot below.



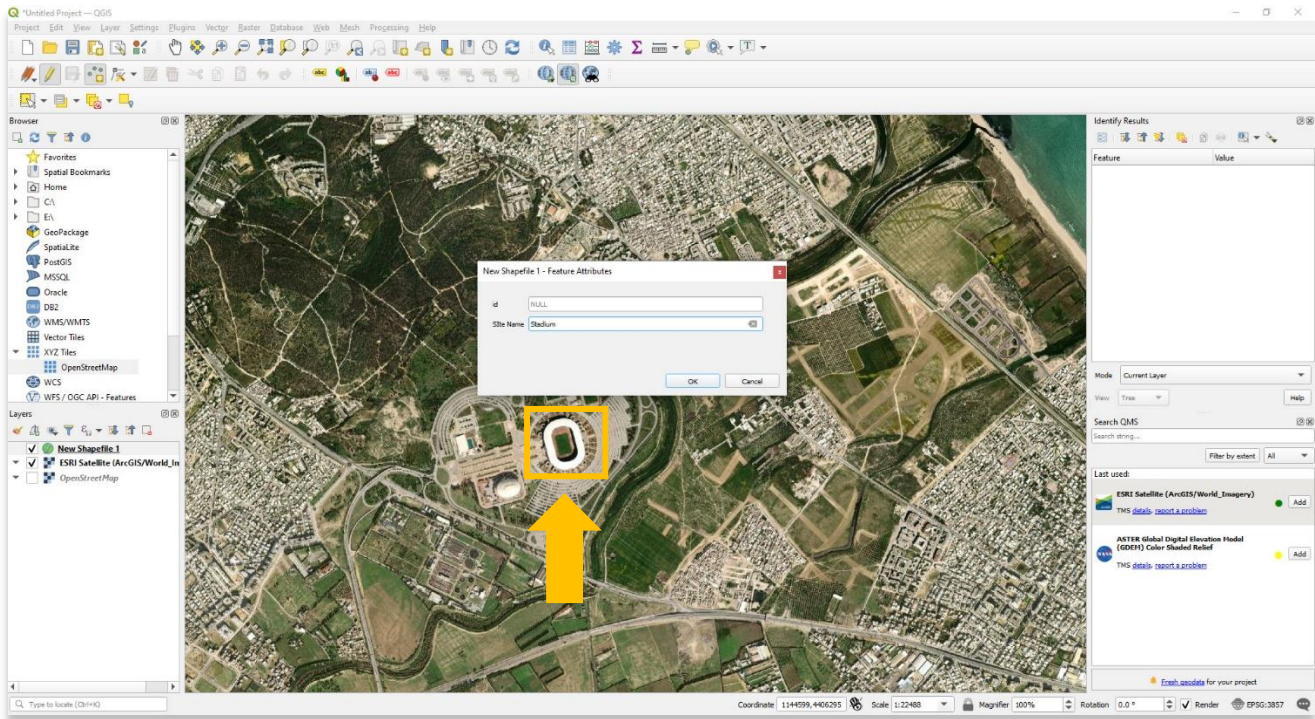
16. Additional tools now become available for users to draw points on your map. If the **Toggle Edit** button does not appear among the tool bars located near the top of the QGIS program, please review steps 1 and 2 in [ASOR Tutorial 02.03 \(Overview of Toolbars, Panels, Setting the Coordinate Reference System \(CRS\), and Adjusting Language Preferences\)](#) for an explanation on how to activate the toolbars needed to edit new shapefiles.



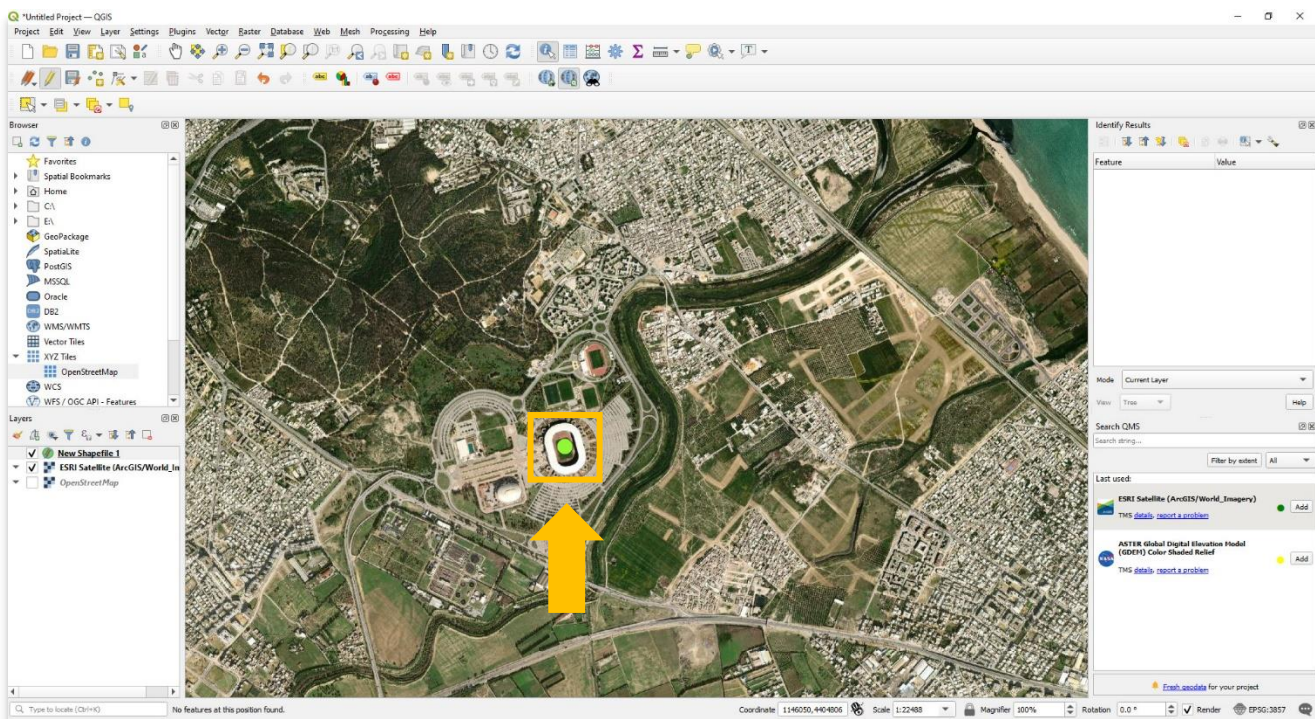
17. Select the **Add Point Feature** button. The mouse will change to resemble a target.



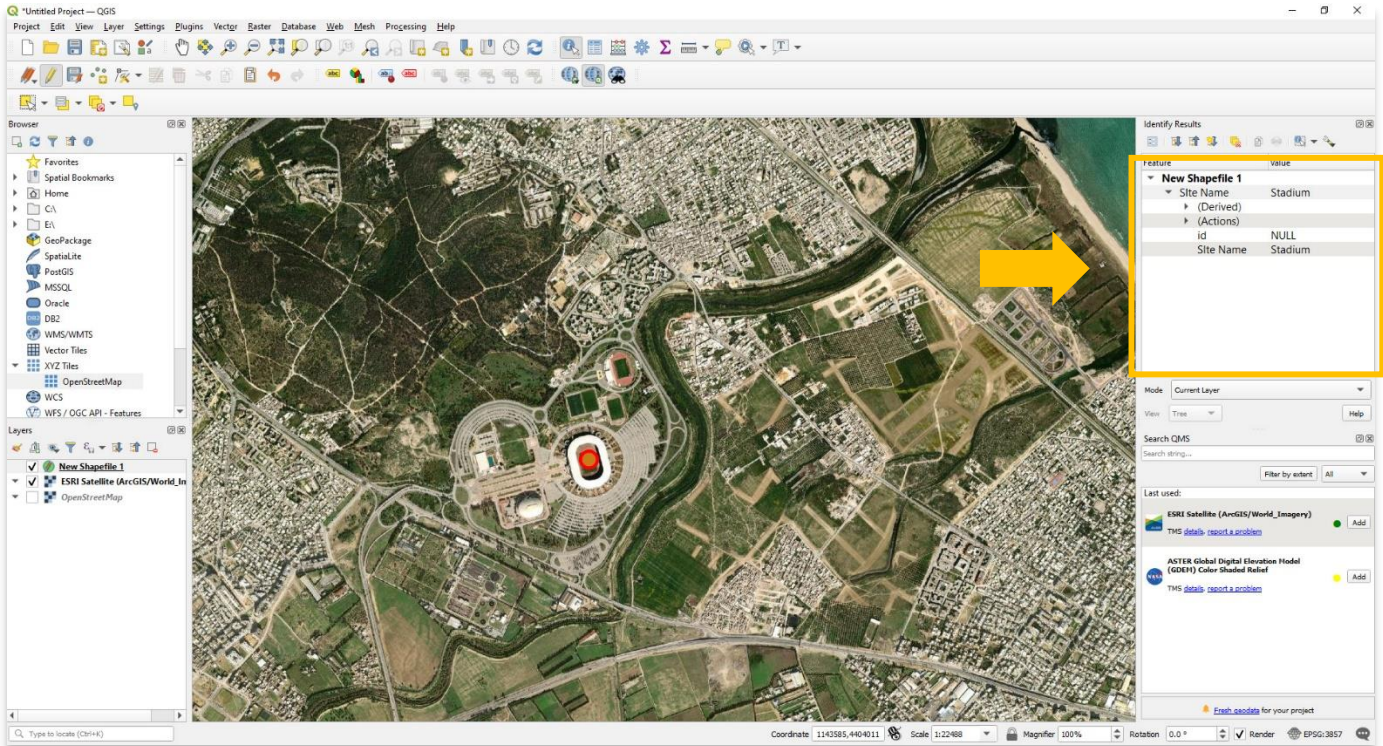
18. Navigate to the location you wish to add a point to, then left click your mouse. A **Feature Attributes** pop-up will appear. You can fill in the information for every field that you created in steps 12 and 13 of this tutorial. Select **OK** when you have finished entering the attribute information.



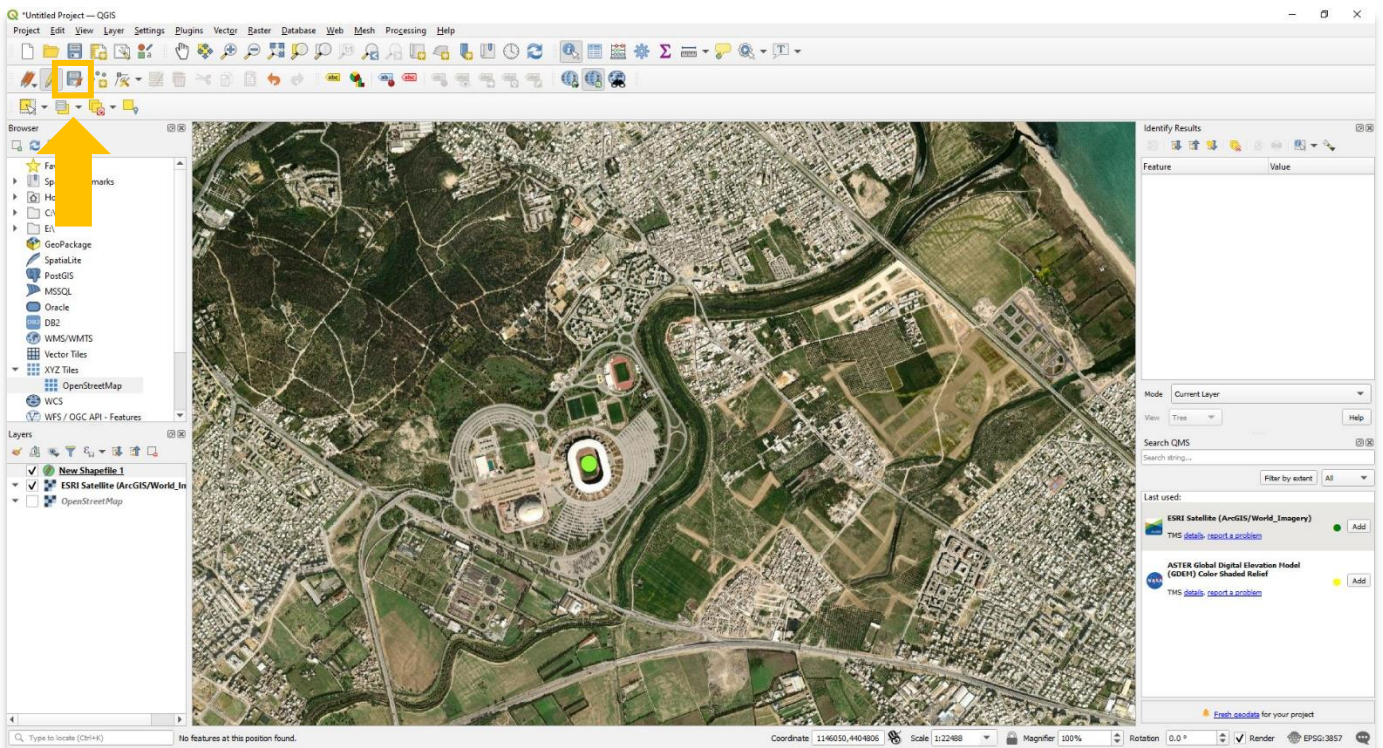
19. The new point now appears on your map. You can continue adding points by repeating step 18 of this tutorial.



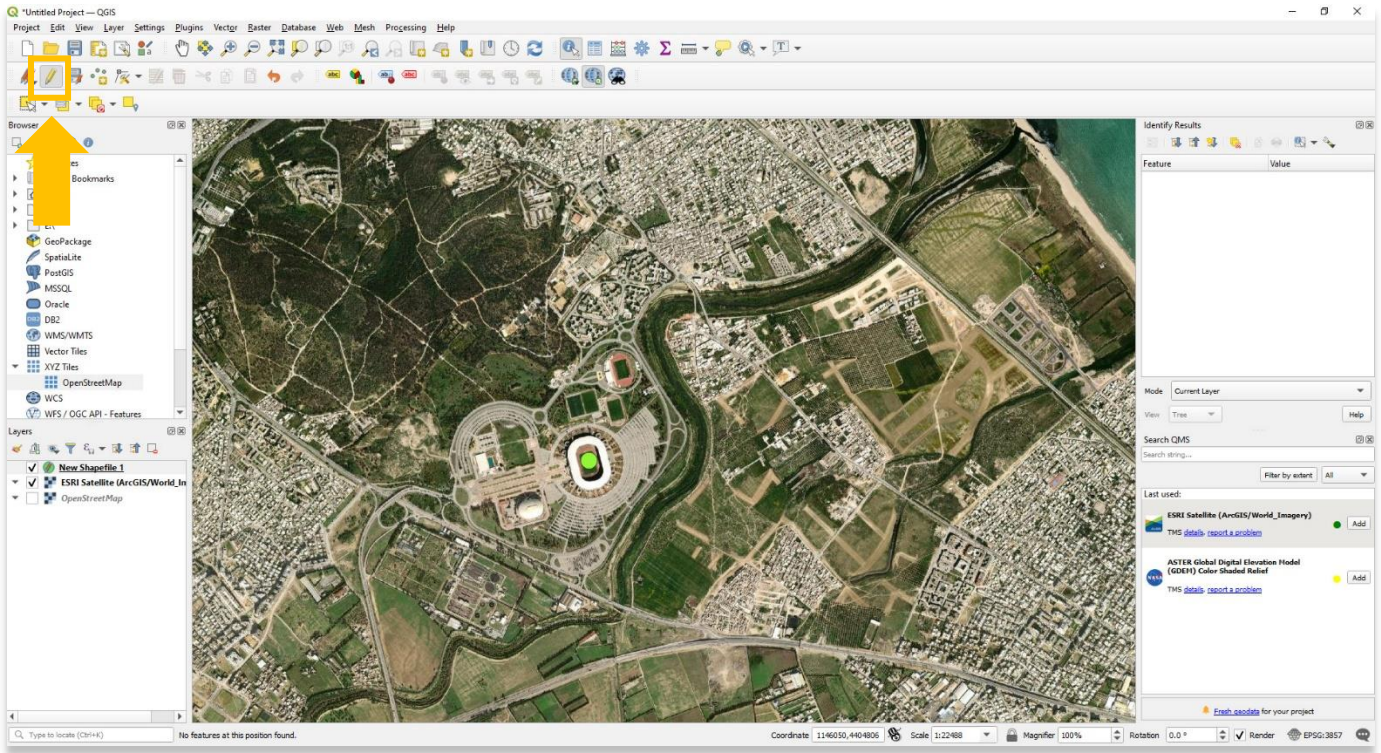
20. Use the **Identify Features** button to display the attribute table for your new shapefile.



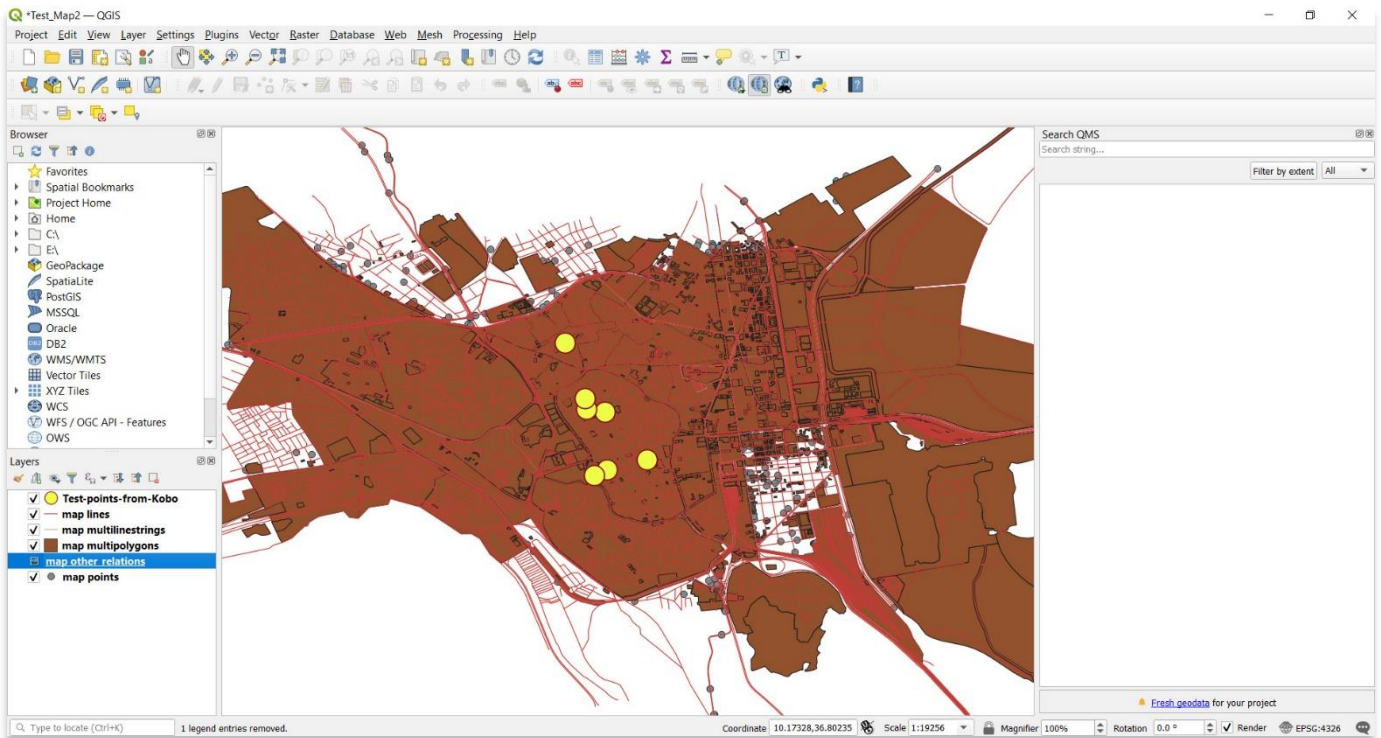
21. The new point now appears on your map. Once finished adding new points, choose the **Save Layer Edits** button.



22. Finally select the **Toggle Edits** button again to stop editing the **New Shapefile 1** layer.



23. You can create more shapefiles by repeating steps 10-22 of this tutorial, including adding lines and polygons to your map.



For more detailed information on anything within this tutorial, please visit QGIS Documentation:

<https://docs.qgis.org/3.16/en/docs/index.html>



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asor.org/chi/chi-tutorials