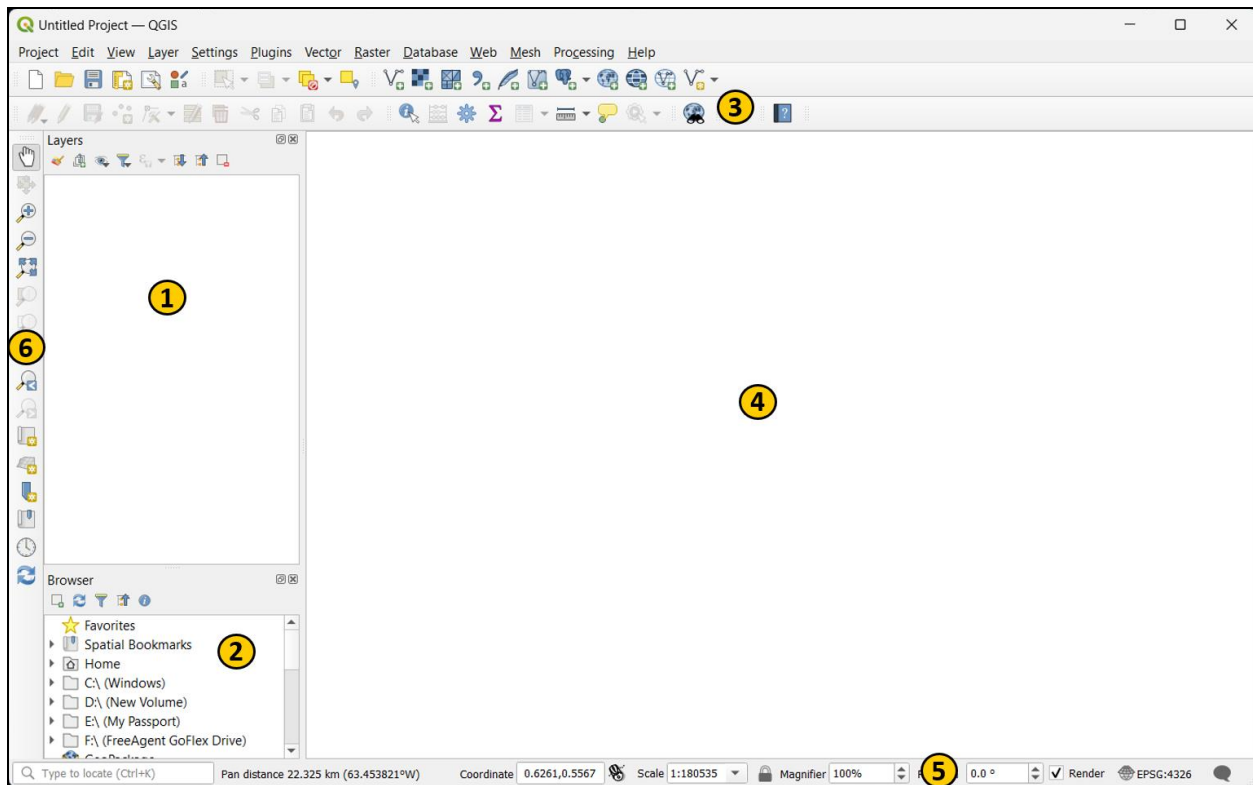


Session 8: Introduction to QGIS (interface, main functionalities)

Navigating the Interface:

Desktop



QGIS interface is divided into 6 main areas:

1. Layers List
2. Browser Panel
3. Toolbars
4. Map canvas
5. Status bar
6. Side Toolbar

Manage Layers Toolbars



- Add Vector Layer
- Add Raster Layer
- Add Mesh Layer
- Add Delimited Text Layer
- Add SpatiaLite Layer
- Add/Edit Virtual Layer
- Add PostGIS Layers
- Add WMS/WMTS Layer
- Add WCS Layer
- Add WFS Layer
- New Shapefile Layer

Map Navigation Toolbars



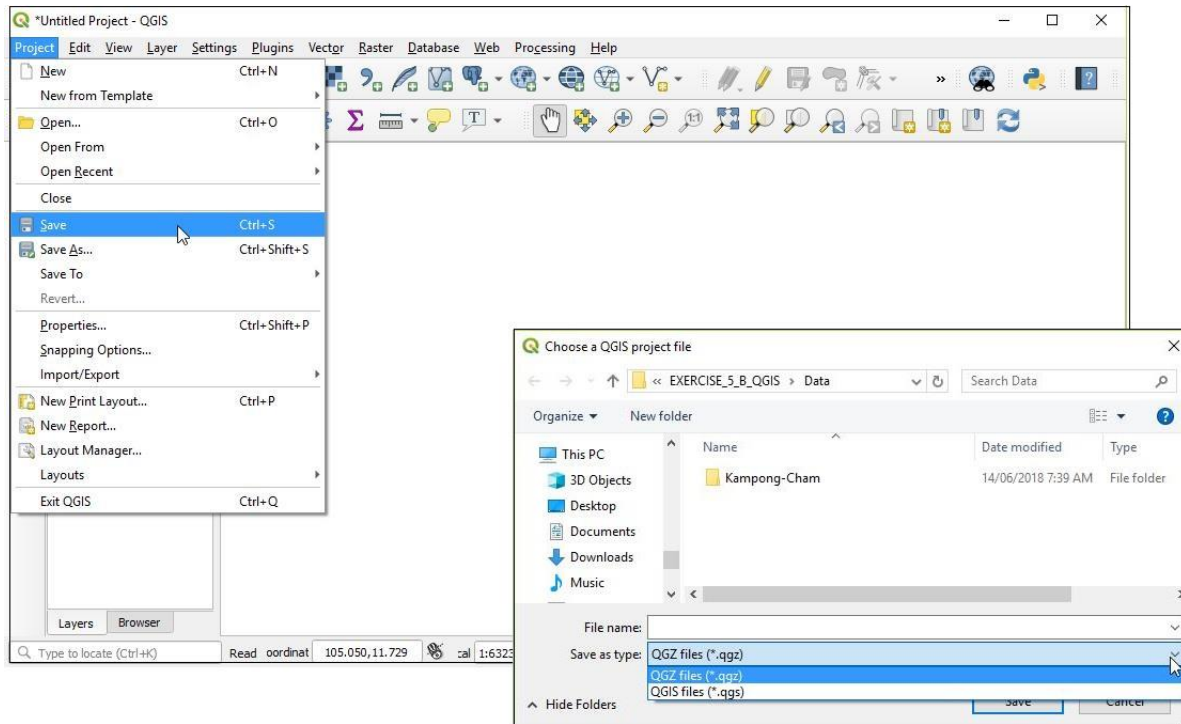
- Pan Map
- Pan Map to Selection
- Zoom In
- Zoom Out
- Zoom to Native Resolution
- Zoom Full
- Zoom to Selection
- Zoom to Layer
- Zoom Last
- Zoom Next
- New Map View
- New Bookmark
- Show Bookmarks
- Refresh

Attributes Toolbar



- Identify Features
- Run Feature Action
- Select Features by area or single click
- Select Features by Value
- Deselect Features from All Layers
- Open Attribute Table
- Open Field Calculator
- Toolbox
- Open statistical summary
- Measure Line
- Show Map Tips
- Text Annotations

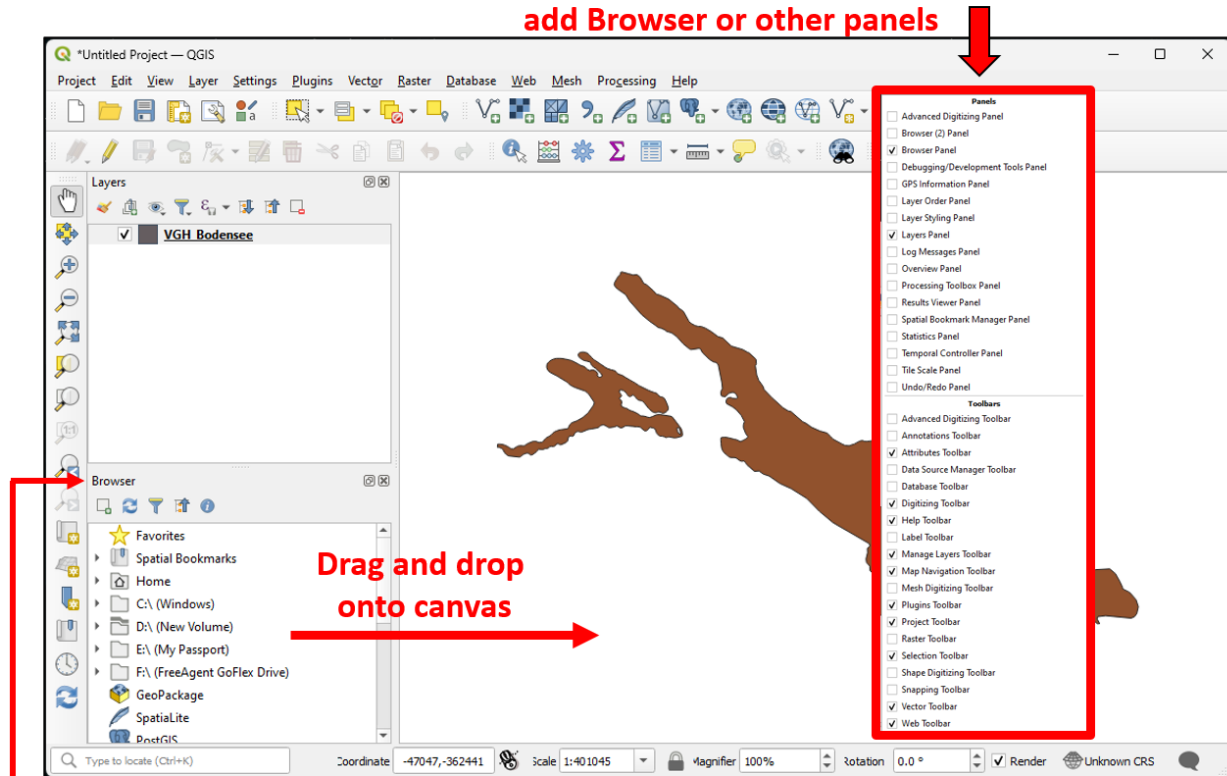
Saving Project Files



- QGIS can save user sessions. (A QGIS file is called a project.)
- Project > Save
- Type in a file name and save your project as a QGZ file (.qgz)
 - QGZ file format is a new default format for QGIS. It is a compressed format with the .qgs file (former default format) embedded in it together with its associated sqlite database (.qgd) for auxiliary data.

Browser Tab

Right-click on the Toolbar area to
add Browser or other panels

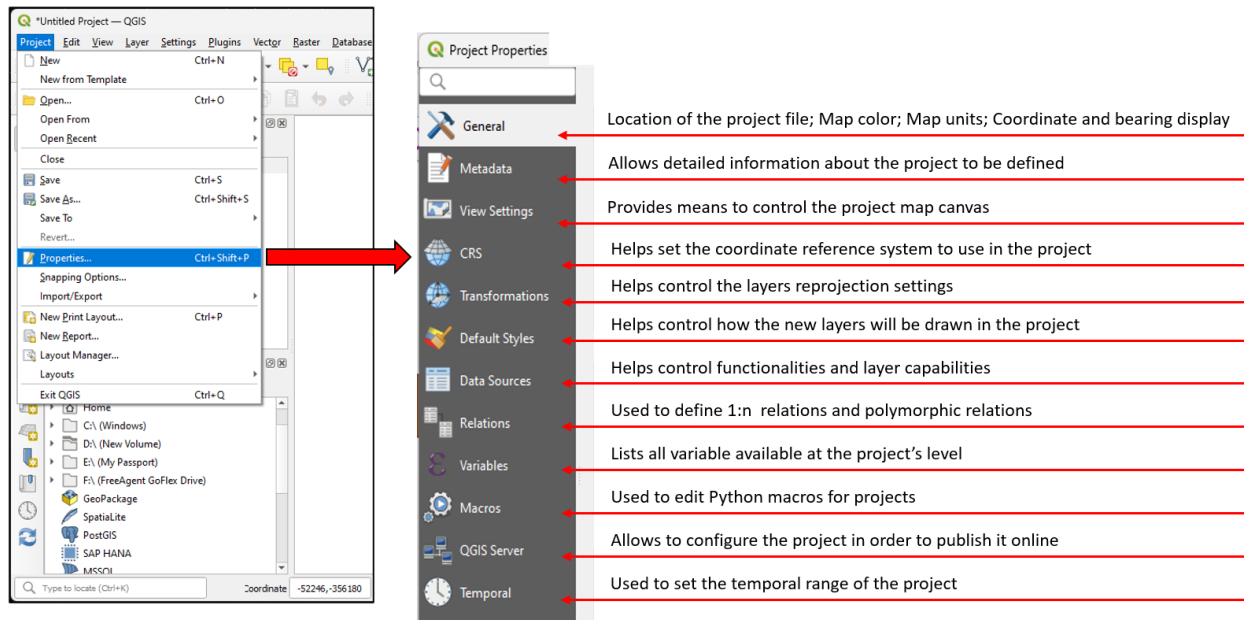


Drag and drop
onto canvas

Browser
Panel

From the Manage Layers toolbar or the Browser panel, you can add shapefiles, databases, WFS, WMS, and several other types of files

Project Properties



The image shows the QGIS Project Properties dialog box, which is used to configure the settings for the current project. The dialog box is divided into several tabs, each with specific functions. A red arrow points from the 'Project' menu in the QGIS interface to the 'Project Properties' dialog box.

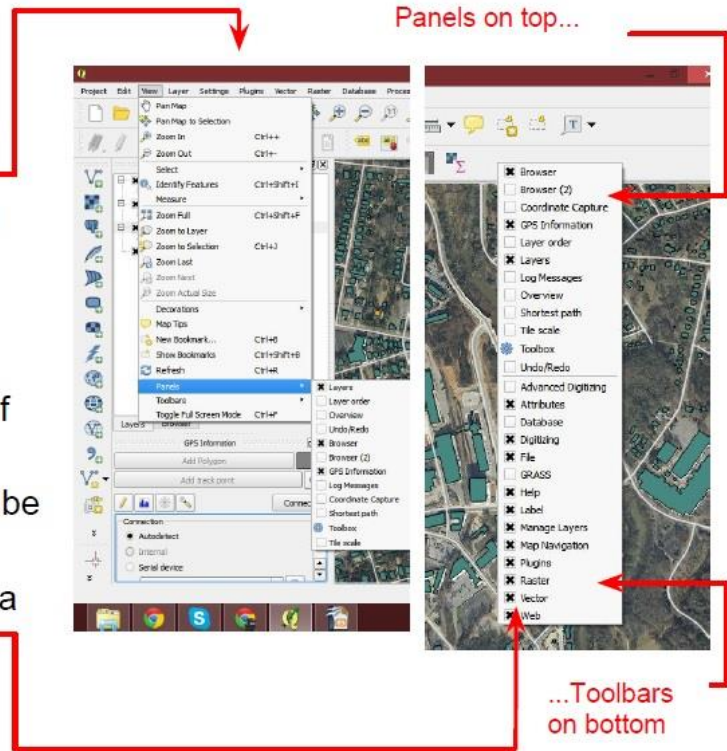
- General**: Location of the project file; Map color; Map units; Coordinate and bearing display
- Metadata**: Allows detailed information about the project to be defined
- View Settings**: Provides means to control the project map canvas
- CRS**: Helps set the coordinate reference system to use in the project
- Transformations**: Helps control the layers reprojection settings
- Default Styles**: Helps control how the new layers will be drawn in the project
- Data Sources**: Helps control functionalities and layer capabilities
- Relations**: Used to define 1:n relations and polymorphic relations
- Variables**: Lists all variable available at the project's level
- Macros**: Used to edit Python macros for projects
- QGIS Server**: Allows to configure the project in order to publish it online
- Temporal**: Used to set the temporal range of the project

Project Properties changes the default project setting for the **CURRENT** QGIS project.

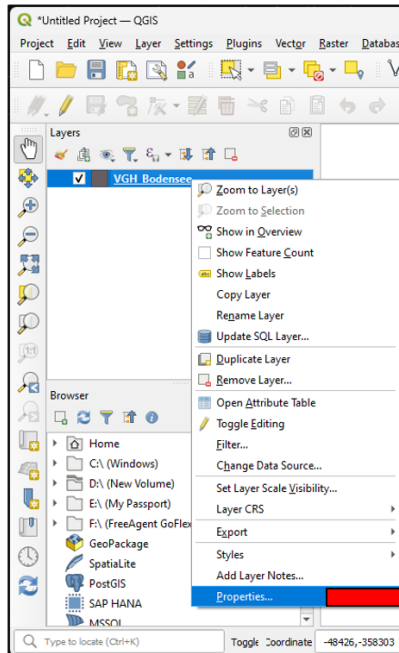
Panels and Toolbars

Panels and Toolbars:

- Turn them on and off by going to View > Panels or Toolbars.
- Panels provide interactive “windows”. Examples: Layers, GPS Information, and toolbox
- Toolbars are a grouping of tools
- Panels/Toolbars can also be added/removed by right-clicking on the toolbar area



Vector Layer Properties

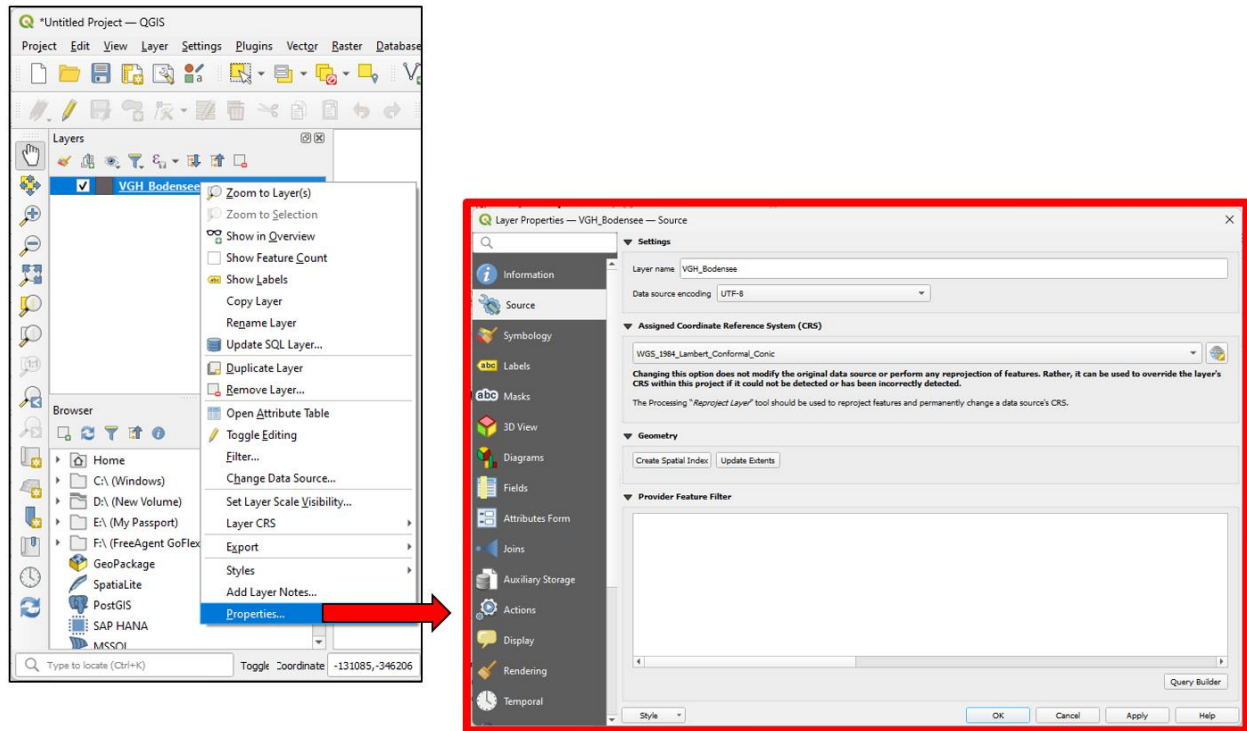


The screenshot shows the QGIS interface with the 'Vector' menu open. The 'Properties...' option is highlighted, and a red arrow points to the 'Layer Properties' window on the right. The 'Layer Properties' window is titled 'Layer Properties - VGH_Bodensee' and contains a list of tabs: Information, Source, Symbology, Labels, Masks, 3D View, Diagrams, Fields, Attributes Form, Joins, Auxiliary Storage, Actions, Display, Rendering, Temporal, Variables, Metadata, Dependencies, Legend, QGIS Server, and Digitizing. Each tab has a corresponding description to its right, connected by a red line.

Tab	Description
Information	Read-only summary of information and metadata on the current layer
Source	Used to define general settings for the vector layer
Symbology	Provides a comprehensive tool for rendering and symbolizing vector data
Labels	Provides the capabilities to configure smart labeling on vector layers
Masks	Helps configure the current layer symbols overlay with other symbol layers or labels
3D View	Allows to add a graphic overlay to a vector layer
Diagrams	Enables 3D rendering
Fields	Provides information on fields related to the layer
Attributes Form	Helps set up the form to display when creating new features
Joins	Allows to join a loaded attribute table to a loaded vector layer
Auxiliary Storage	Allows to store properties for layers that are not editable
Actions	Provides the ability to perform an action based on the attributes of a feature
Display	Helps configure fields to use for feature identification
Rendering	Allows to set the scale dependent visibility and simplify geometry
Temporal	Provides option to control the rendering of the layer over time
Variables	Lists all the variables available at the layer's level
Metadata	Provides options to create and edit a metadata report on a layer
Dependencies	Allows to declare data dependencies between layers
Legend	Provides advanced settings for the Layers panel and/or the print layout legend
QGIS Server	Consists of Description, Attribution, MetadataURL, and LegendUrl sections
Digitizing	Gives access to options that help to ensure the quality of digitized geometries

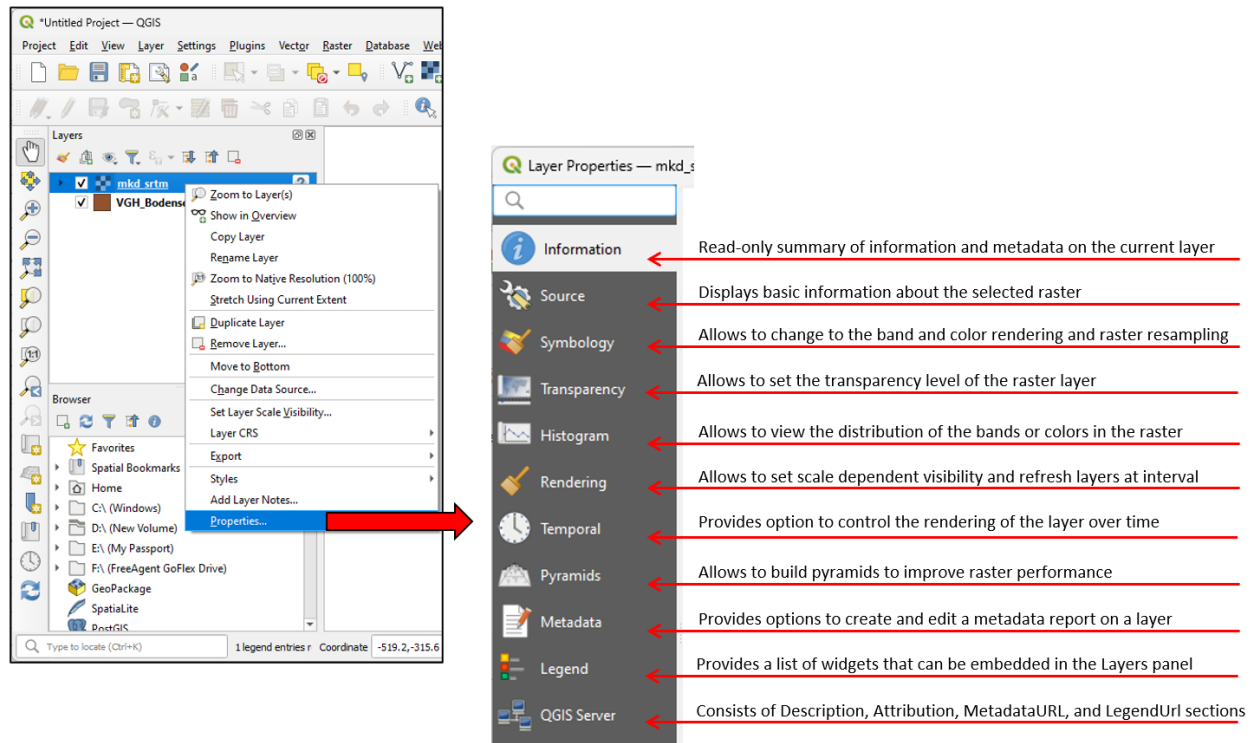
The (Vector) Layer Properties window provides information about the vector layer and provides general settings to manage appearance of layer features in the map (symbology, labeling, diagrams) and interaction with the mouse (actions, map tips, form design).

Data Projections



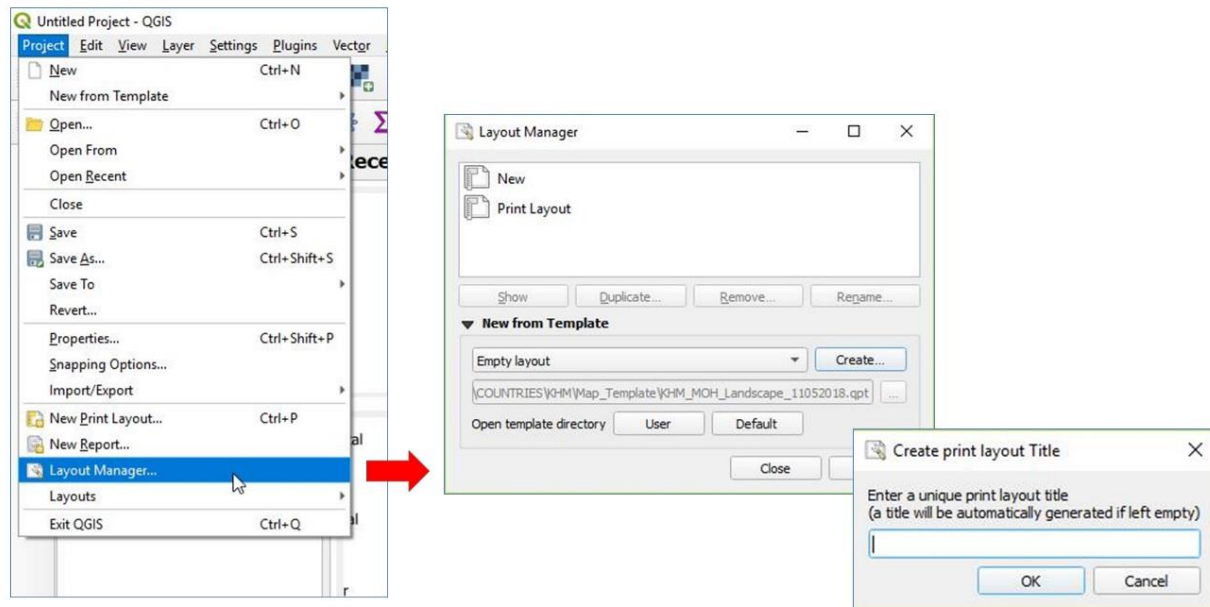
All vector/raster layers have a projection or CRS. The quickest way to check projections is to right click on the layer > Properties > Source

Raster Layer Properties



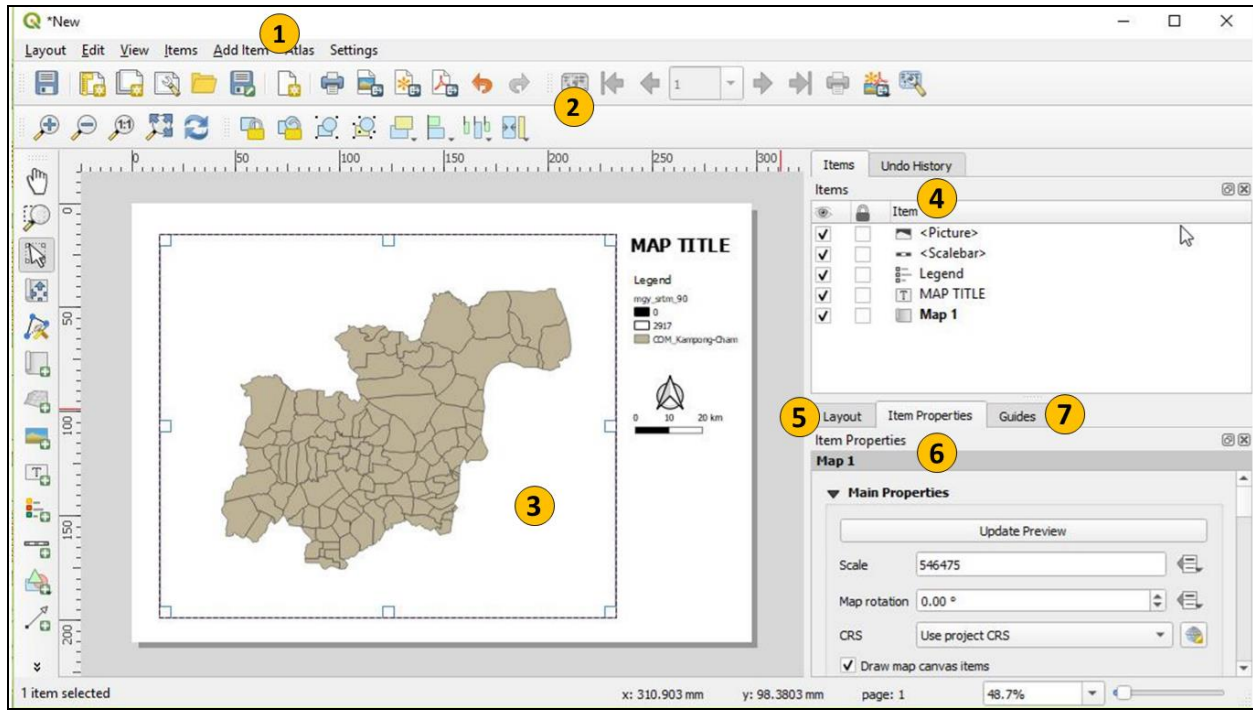
The (Raster) Layer Properties window provides information about the layer as well as the ability to set pyramids levels, adjust appearance, and view the histogram.

Layout Manager



The Layout Manager allows you to create a new map layout either from an empty layout or a template. It can be accessed from the Project menu (Project > Layout Manager) or in the Print Layout window (Layout > Layout Manager).

Print Layout



Print Layout interface: 1. Menu Bar; 2. Toolbar; 3. Map Layout; 4. Items and Command History; 5. Layout Properties; 6. Item Properties; 7. Guides

Layout Toolbar



- Save project
- New layout
- Duplicate layout
- Layout manager
- Add items from template
- Save as template
- Add Pages...
- Print Layout
- Export as image
- Export as SVG...
- Export as PDF...
- Undo
- Redo

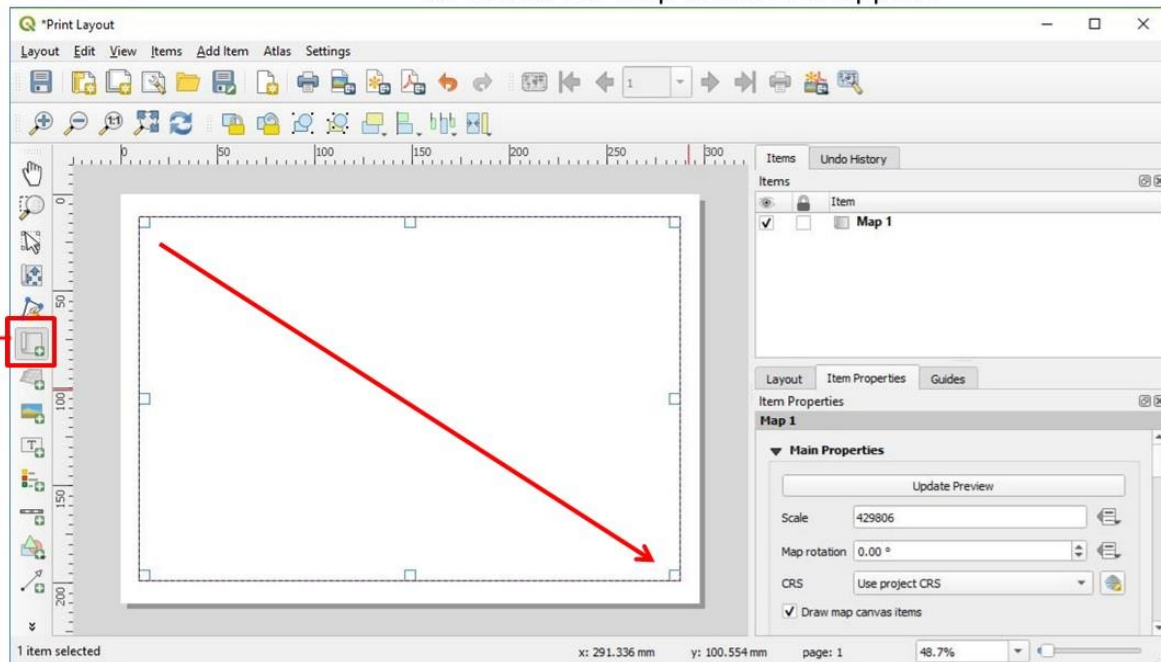
Navigation Toolbar



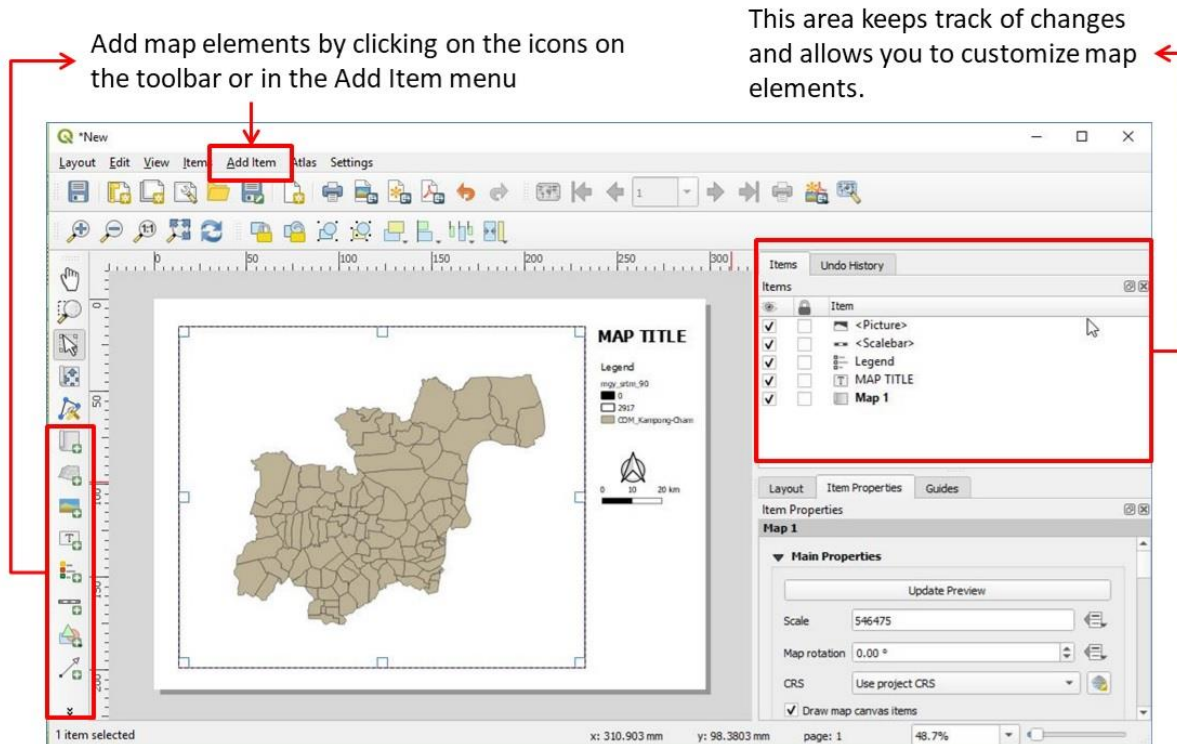
- Zoom in
- Zoom out
- Zoom to 100%
- Zoom full
- Refresh view

Print Layout

Click on the Add Map button then draw a rectangle for where the Map Canvas will appear.



Map Elements



Once the map has been added, the other map elements can be added. Their properties, as well as the page properties, can be viewed and modified. The Print Layout tracks changes in the Undo History window.

Layout

- Set the grid spacing and snap tolerance
- Export settings
- Resize layout to content

Item Properties

- Set the font
- Set scale bar properties
- Set legend properties
- Set map element properties