

QGIS: Creating and Saving Geopackage Files

QGIS 3.10

Welcome to the Essential QGIS Tasksheet Series. This series supplements the Iowa State University Geospatial Technology Training Program short course series. The tasksheets are designed to provide quick, easy instructions for performing mapping tasks.

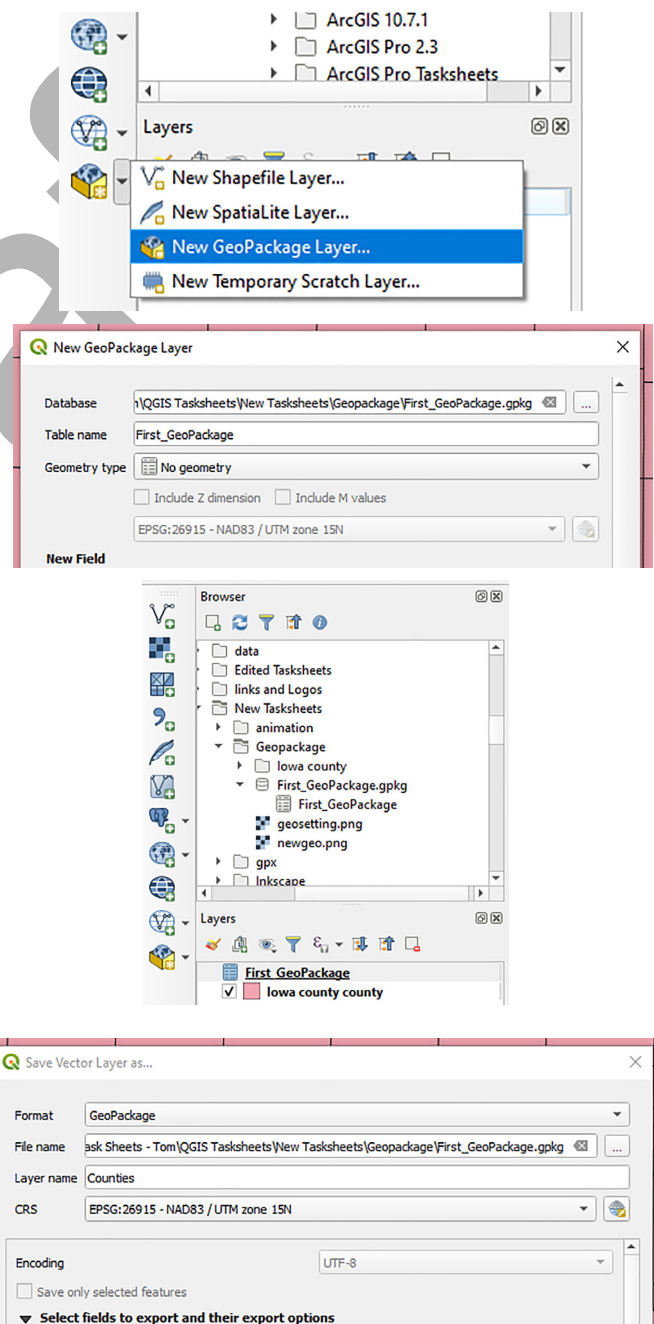
In this tasksheet you will learn about the advantages of GeoPackage files (.gpkg), and how to create and save them. Many users have switched and prefer Geopackages over Shapefiles and other common raster/vector files. Geopackages allow the storing of multiple geometries and layers in one file: points, lines, and polygons, as well as their layer attributes and symbology will all be saved onto one GeoPackage file that can be easily shared with other users.

1. Getting Started

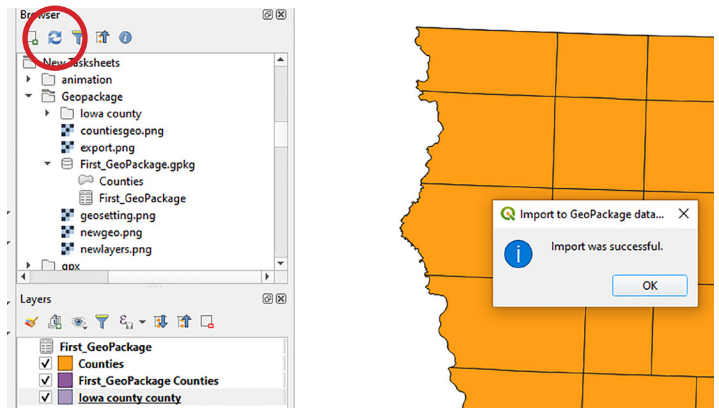
- Download data for this tasksheet at <http://issueogtp.github.io/GISTaskSheets/TaskSheetData/PM2082-201.zip>.
- Open a new QGIS project and add shapefile **Counties.shp**.

2. Create GeoPackage Database

- Using the **New GeoPackage Layer...**  Button to open the New GeoPackage Layer window.
- If the New GeoPackage Layer option is not visible, it can be found by opening **View** from the main menu, expand the **Toolbars** option and check the box for **Data Source Manager Toolbar**.
- In the New GeoPackage Layer window find a Location for the Database by clicking the ellipse.
- Give a **Table Name** such as **First_GeoPackage**. Below you can create new fields for the attribute table and save them. *Notice: GeoPackage files do not have a character limit to their column headers, like a shapefile, allowing users to make long descriptive field titles.*
- Click **OK** to close the window.
- A new layer will appear in your Layer panel, as well as a new folder in your Browser panel.
- In layer panel right-click **Iowa Counties** select **Export** and **Save Feature As...**
- In the Save Vector Layer as... window the format will be set to GeoPackage, and will have the same file name as First_GeoPackage, For **Layer Name** type **Counties**, and click **OK** to save the layer.

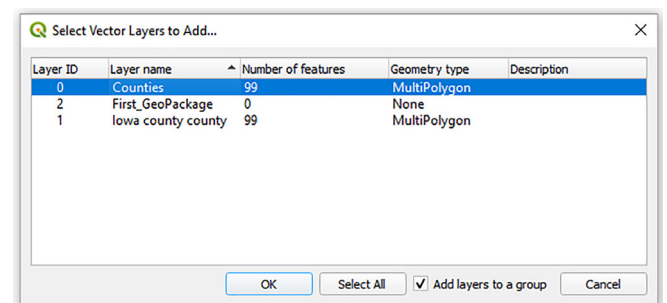
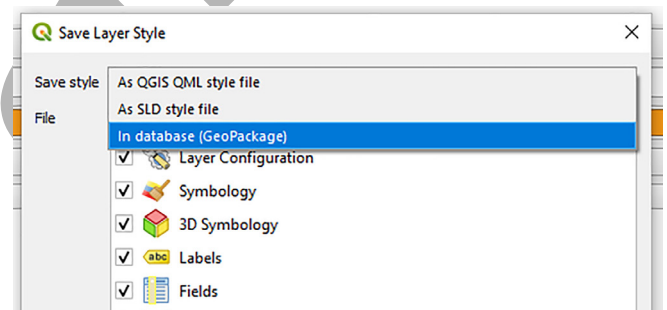
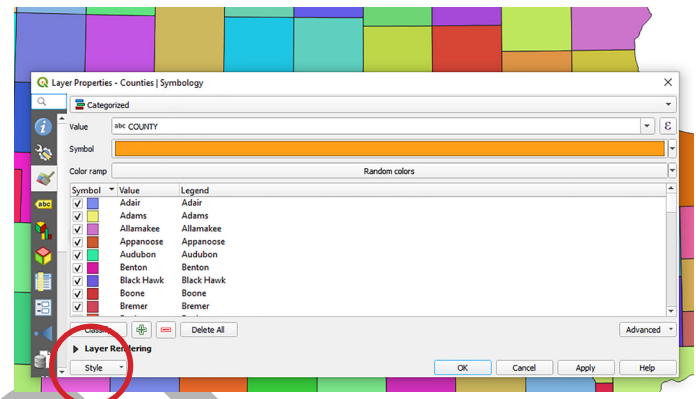


- k. Your GeoPackage file will automatically be added to your project.
- l. Refresh browser panel find **Counties** under **First_GeoPackage.gpkg** and drag to layer panel.
- m. Likewise, you can drag **Iowa County** from layer panel and drop onto the GeoPackage location in the Browser panel to quickly create GeoPackage files.



3. Saving GeoPackage Symbology

- a. Open the **Symbology** for your new GeoPackage layer **Counties**, set the symbology to **Categorized** and **Value** to **COUNTY** to give each county a unique color. Click **Classify** then **Apply** to see the changes.
- b. While in the Symbology tab open **Style** and select **Save Style...**
- c. Save Layer Style window opens, Set **Save Style** option to **In Database (GeoPackage)** click **OK**.
- d. Locate your GeoPackage in your file explore, you will notice there are three files associated with your project.
- e. The **shm** and **wal** file are temporary files and will disappear when you close QGIS, and reappear the next time your file is being used.
- f. Open a blank **New QGIS** project and add **First_GeoPackage.gpkg**
- g. Select Vector Layer to Add... window appears. A list of the layers you created appear. Select **Counties** and click **OK** to open you project and notice the symbology was saved with it.
- h. Layers can also be added to your Layer panel from the Browser panel.
- i. When sharing a GeoPackage file with other users you only need to share the one .gpkg file, and the other users will have all the same data.



Contact:

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