Fill Gaps Plugin Ver 0.1

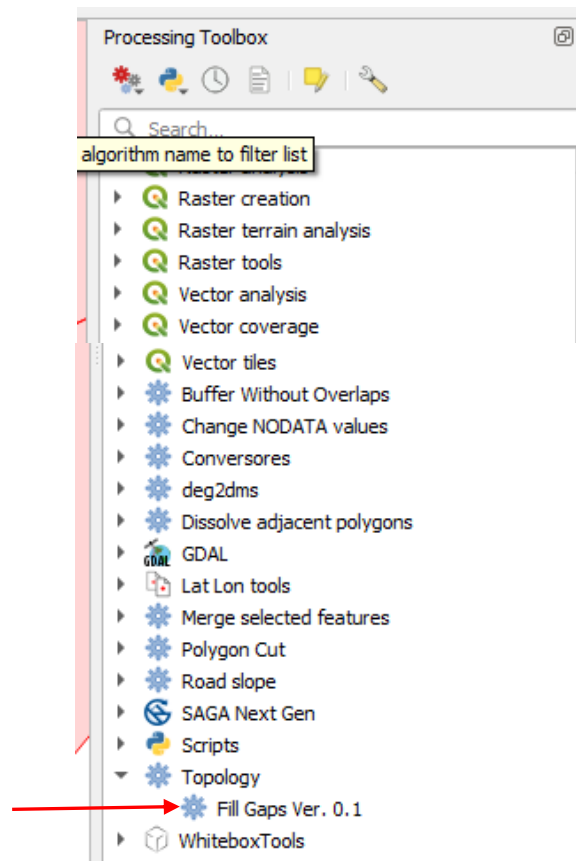## QGis 3.40 LTR

1. <u>Introduction</u>
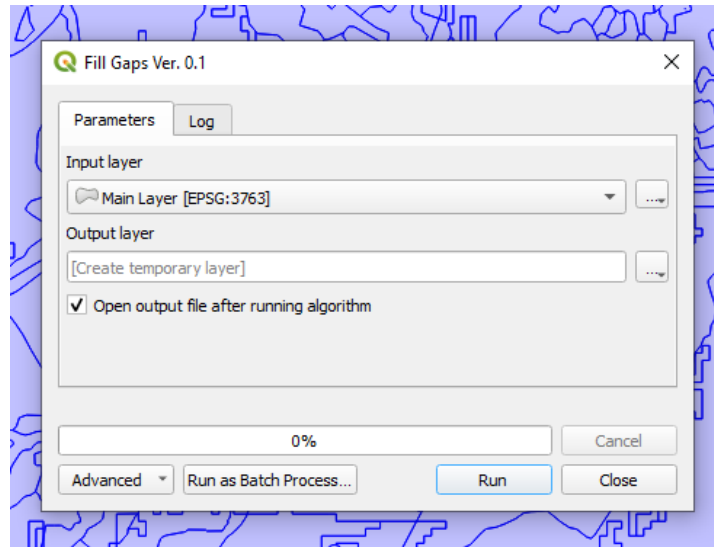
   This plugin is intended to fill slivers, gaps and holes in a polygon layer.

2. <u>Using the plugin</u>

   Run the plugin by double clicking *Processing Toolbox -> Topology -> Fill Gaps Ver. 0.1*, like the following image:

   This action opens the following plugin parameters window:

Where:

- *Input layer*: **the polygon layer with slivers, gaps and/or holes;**
- *Output layer:* **the polygon layer that results from the plugin's action, named "Fill gaps result".**

3. Slivers, gaps, rings and holes

Let's recap what the docs say about these four topics:

Slivers: slivers are tiny, unwanted spaces between adjacent polygons, often created by differences in shared boundaries; slivers occur when the vertices of two adjacent polygons do not match up on their borders.

Gaps: are small or large voids in-between two or more adjacent polygons; we can also consider two types of gaps:
**A) unwanted gaps, which usually occur during editing sessions;**
B) deliberately created gaps (Ex.: roads, in a cadastral map).

Rings and Holes: "holes" and "rings" are the same concept - a void inside a polygon in a polygon layer (I.e.: inside a feature of a polygon layer); holes and rings can be created or deleted using the tools in the *Advanced digitizing tools* toolbar.

4. <u>**So, what does this plugin do?**</u>

This plugin fills in all slivers, gaps, and holes (rings) that are marked by the "Topology checker" tool.
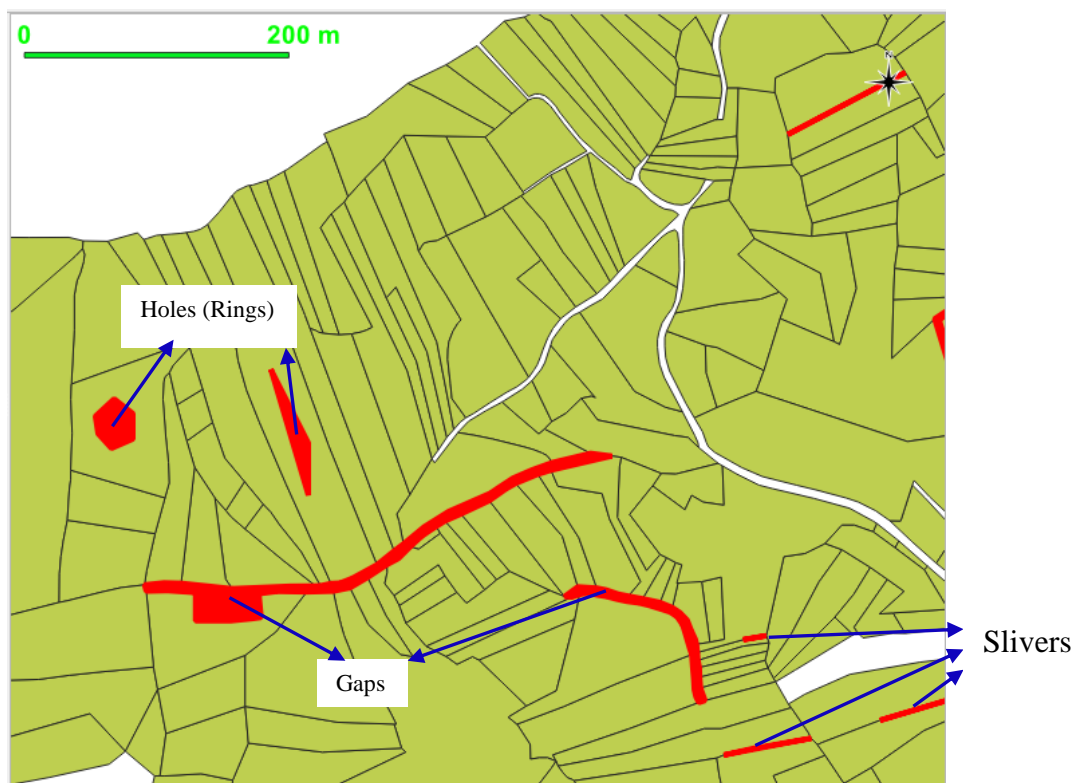**Consider the following cadastral map, where roads and holes (rings within polygons) are visible:**
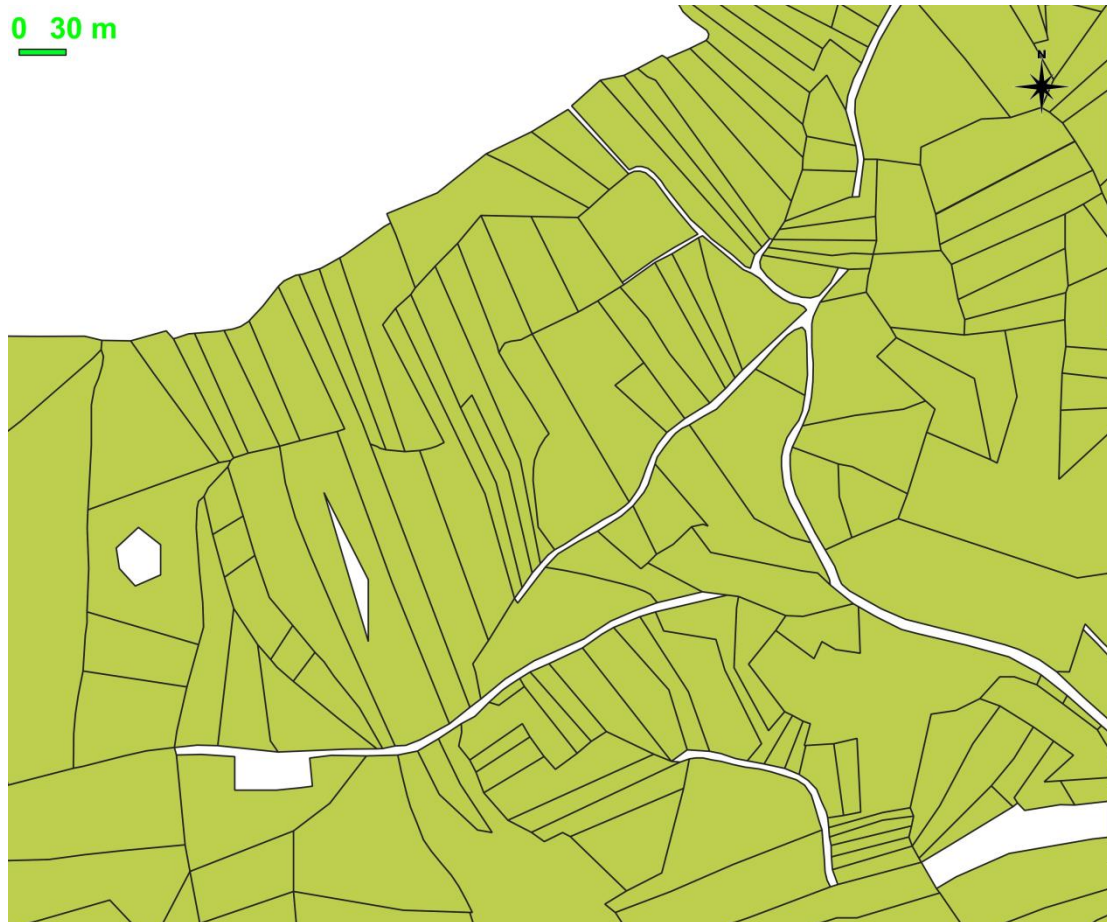

After running the "Topology checker" tool, available from the QGis Plugins Manager, and selecting the layer of this map and the "<u>must not have gaps</u>" option, as shown in the image below…
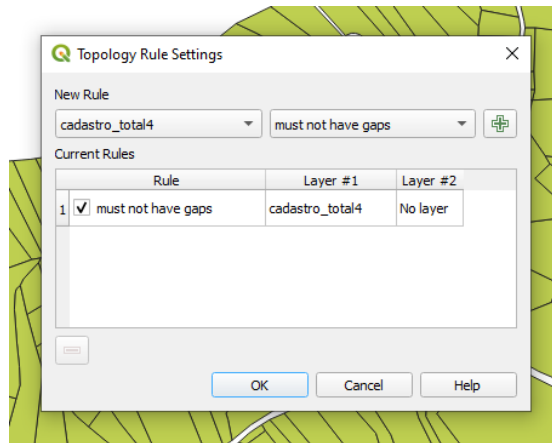
… we got this map:

Note that slivers, holes (rings), and gaps corresponding to some roads (which are completely surrounded by polygons) have been marked by the "Topology checker". Now run the "Fill gaps" plugin and re-run "Topology checker" on the "Fill gaps result" layer:
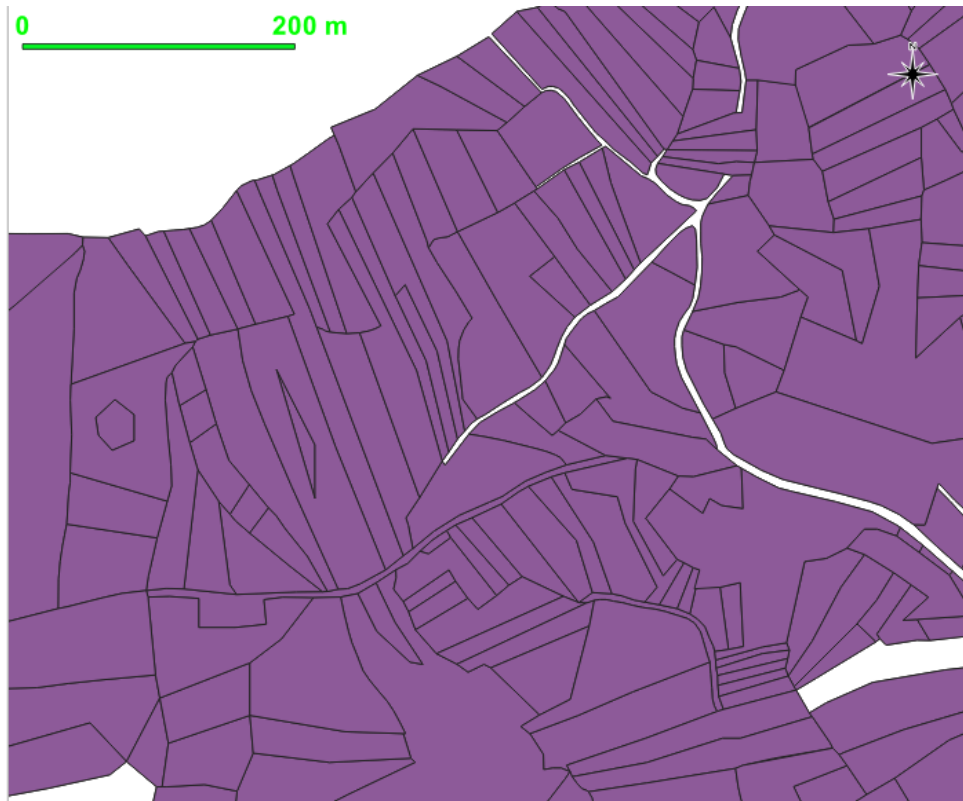
As can be seen in the above picture, all the slivers, gaps, and holes (rings) that were checked by the "Topology checker" plugin, have been filled.

The user can check these "new" polygons through the "Fill gaps result" attribute table, selecting the features that have the string "Selected features" in the field named "layer".

If there are gaps that were deliberately created and should not be filled, i.e., they should remain empty spaces, they can be manually deleted by visually comparing the Input layer with the "Fill gaps result" layer.

5. <u>**Can a second pass improve the efficiency of this plugin?**</u>

Yes, of course!

After running the plugin, run "Topology checker" on the "Fill gaps result" layer, and check if there are still slivers or gaps.

If there are still slivers or gaps, run this plugin (Fill gaps) on the result of the first pass (Fill gaps result), and this second pass should eliminate all remaining slivers and gaps.

6. What to do with a considerable number of very small area polygons in the "Fill gaps result" layer?

These polygons, with the string "Selected features" in the "layer" field of the attribute table, and with very small areas, between zero and, say, one m^2, result from the filling of slivers performed by this plugin, and normally have no meaning within the scope of the input layer.

They can be dissolved into an adjacent polygon using the "Eliminate Selected Polygons" tool available on the menu Vector -> Geoprocessing Tools.